

PATENT ABSTRACTS OF JAPAN

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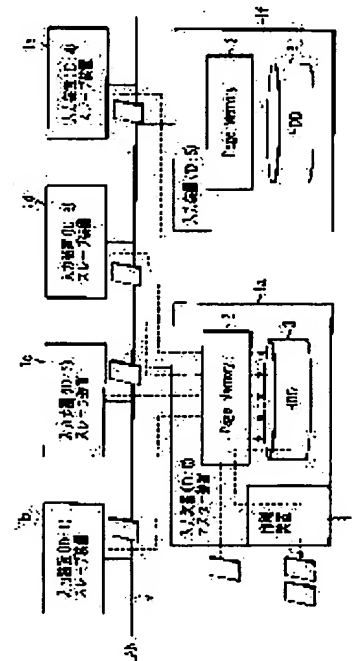
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(54) IMAGE FORMING SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an image forming system where control methods or parameters can be set/revised to each of image forming devices or image reading devices connected through a network so as to facilitate the image read jobs efficient for various image types.

SOLUTION: A plurality of devices for reading document images are connected to a print device through a network in this invention. A master device and slave devices are set among the devices. Read conditions and image forming conditions are notified to the slave devices by the master device. Each slave device reads an original document based on the read condition, and outputs the read image data attached with the image forming condition, to the print device. The print device prints image data from various read devices under the image forming conditions attached thereto, thereby to print image data from the plurality of read devices, integrated with each other.



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CLAIMS

[Claim(s)]

[Claim 1] The reading function to read a manuscript image at least in the system which consists of two or more connected equipments, On the processing conditions set up by the setting up function which sets up the processing conditions over the read image data, and this setting up function, the account of a top The 1st equipment which has the transmitting function which processes the read manuscript image and transmits, If the above-mentioned manuscript image which is connected to this 1st equipment and transmitted from the 1st equipment of the above is received The modification setting up function which changes the processing conditions set up by the setting up function of the 1st equipment of the above among the manuscript images received from the 1st equipment of the above, The image formation system characterized by providing the 2nd equipment which has the image output function which processes to the above-mentioned manuscript image on the processing conditions changed by this modification setting up function, and outputs an image.

[Claim 2] The image formation system according to claim 1 by which the above-mentioned processing conditions are characterized by being image attribute information, such as manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, and adjustment value information at the time of a gamma correction.

[Claim 3] The 1st and 2nd equipment of the above, respectively A reading function, a setting up function, a transmitting function, Have a reception function, a modification setting up function, and an image output function, and master assignment of either is carried out among the 1st and 2nd equipment of the above. The equipment concerned is received, when it comes further to have the assignment function which carries out slave assignment of another side and master assignment of one of the equipments is carried out. The image formation system according to claim 1 characterized by assigning a reading function, a setting up function, and a transmitting function, and assigning a reception function, a modification setting up function, and an image output function to the equipment of another side.

[Claim 4] In the image reading system to which two or more 1st equipments which have the reading function to read a manuscript image at least, and the 2nd equipment which has the setting up function which sets up reading conditions at least are connected through the communication line A setting means by which have the reading function in which each 1st equipment of the above performs read of the above-mentioned manuscript based on the reading conditions supplied by the 2nd equipment of the above, and the 2nd equipment of the above sets up the reading conditions of the reading function in each 1st equipment of the above, The image reading system characterized by what is consisted of an interface which outputs the reading conditions set up by this setting means to each 1st corresponding equipment of the above.

[Claim 5] The image reading system according to claim 4 characterized by for the 1st equipment of the above having the above-mentioned setting up function, or the 2nd equipment of the above having the above-mentioned reading function.

[Claim 6] The image reading system according to claim 4 by which the above-mentioned reading conditions are characterized by being image attribute information, such as manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, and adjustment value information at the time of a gamma correction.

[Claim 7] The image reading system according to claim 4 characterized by carrying out slave assignment of other equipments when the 1st and 2nd equipment of the above has the above-mentioned setting up function and the above-mentioned reading function, respectively and master assignment is made by the setting up

function of any one equipment of the 1st and 2nd equipment of the above.

[Claim 8] When the 1st and 2nd equipment of the above has the above-mentioned setting up function and the above-mentioned reading function, respectively and master assignment is made by the setting up function of any one equipment of the 1st and 2nd equipment of the above The respectively separate reading conditions over the equipment with which slave assignment was made by the setting up function of the equipment with which master assignment was made in that by which slave assignment of other equipments is carried out are set up. The image reading system according to claim 4 characterized by indicating by list the reading conditions set up by the equipment by which the above-mentioned master assignment was made in the equipment with which slave assignment was made.

[Claim 9] The image reading system according to claim 4 by which the above-mentioned reading conditions are characterized by being image attribute information, such as manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, and adjustment value information at the time of a gamma correction.

[Claim 10] Two or more 1st equipments which have the reading function to read a manuscript image at least, In the image processing system to which the 2nd equipment which has the setting up function which sets up reading conditions at least, and the 3rd equipment which has the image formation function which forms the image based on image data on an image formation-ed medium at least are connected through the communication line the 1st equipment of the above The scanner which performs read of the above-mentioned manuscript image based on the reading conditions supplied by the 2nd equipment of the above, It consists of the 1st interface which outputs the image data read with this scanner to the 3rd equipment of the above with the image formation conditions of the image data supplied by the 2nd equipment of the above. A setting means by which the 2nd equipment of the above sets up the reading conditions over the reading function of each 1st equipment of the above, and the image formation conditions of the separate image data to each 1st equipment, It consists of the 2nd interface which outputs the reading conditions set up by this setting means, and image formation conditions to each 1st corresponding equipment of the above. The image processing system characterized by what it has for image formation equipment with which the 3rd equipment of the above forms the image based on the image data supplied by the 1st equipment of the above on an image formation-ed medium based on the image formation conditions supplied with this image data.

[Claim 11] The image processing system according to claim 10 characterized by for the 1st equipment of the above having at least one side of the above-mentioned setting up function and the above-mentioned image formation function, for the 2nd equipment of the above having at least one side of the above-mentioned reading function and the above-mentioned image formation function, and the 3rd equipment of the above having at least one side of the above-mentioned setting up function and the above-mentioned reading function.

[Claim 12] The image processing system according to claim 10 with which the above-mentioned reading conditions are characterized by being image attribute information, such as manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, and adjustment value information at the time of a gamma correction.

[Claim 13] The image processing system according to claim 10 characterized by the above-mentioned image formation conditions being conditions which specify the image formation format of paginal order or the reverse order of a page for the image formation to one side of the above-mentioned image formation-ed medium, the image formation to both sides of the above-mentioned image formation-ed medium, rotation of image data, reversal of image data, and the image data for two or more pages.

[Claim 14] The image processing system according to claim 10 characterized by the above-mentioned image formation conditions being conditions which specify the class of the above-mentioned image formation-ed medium.

[Claim 15] The image processing system according to claim 14 with which the conditions which specify the class of the above-mentioned image formation-ed medium are characterized by being output-media information, such as pasteboard, paper only for colors, a regular paper, and OHP.

[Claim 16] The image processing system according to claim 10 characterized by carrying out slave assignment of other equipments when the 1st and 2nd equipment of the above has the above-mentioned setting up function and the above-mentioned reading function, respectively and master assignment is made by the setting up function of any one equipment of the 1st and 2nd equipment of the above.

[Claim 17] When the 1st and 2nd equipment of the above has the above-mentioned setting up function and the

above-mentioned reading function, respectively and master assignment is made by the setting up function of any one equipment of the 1st and 2nd equipment of the above. The reading conditions and image formation conditions over the equipment with which slave assignment was made by the setting up function of the equipment with which master assignment was made in that by which slave assignment of other equipments is carried out are set up. The image reading system according to claim 10 characterized by indicating the reading conditions set up by the equipment by which the above-mentioned master assignment was made in the equipment with which slave assignment was made, and the image formation conditions by list.

[Claim 18] The image processing system according to claim 17 with which the above-mentioned reading conditions are characterized by being image attribute information, such as manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, and adjustment value information at the time of a gamma correction.

[Claim 19] An image processing system given in 17 to the claim to which the above-mentioned image formation conditions are characterized by being the conditions which specify the image formation of paginal order or the reverse order of a page for the image formation to one side of the above-mentioned image formation-ed medium, the image formation to both sides of the above-mentioned image formation-ed medium, rotation of image data, reversal of image data, and the image data for two or more pages.

[Claim 20] The image processing system according to claim 17 characterized by the above-mentioned image formation conditions being conditions which specify the class of the above-mentioned image formation-ed medium.

[Claim 21] The image processing system according to claim 17 with which the conditions which specify the class of the above-mentioned image formation-ed medium are characterized by being output-media information, such as pasteboard, paper only for colors, a regular paper, and OHP.

[Claim 22] The image processing system according to claim 17 characterized by having a modification means to change the reading conditions by which it is indicated [above-mentioned] by the list, and image formation conditions.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention consists of the input device and output unit which are connected by means of communications, and relates to the image formation system which performs image formation based on input data by outputting the input data from an input device to an output unit.

[0002]

[Description of the Prior Art] Conventionally, the approach of outputting the approach of outputting the input data from two or more input devices to one set of an output unit and the image data conversely inputted from one set of an input device to two or more output units by the network and other means of communications is already proposed partly (1. JP,8-289053,A, 2. patent No. 2998966, 3. JP,7-65145,A, 4. JP,7-147615,A).

[0003] By these proposals, mainly between the equipment respectively connected for the purpose of improvement in the throughput of a copy The status information of equipment can be delivered [that it is possible to choose the equipment to be used (1-4),] (3 4), Thing (3) which assigns the proper address to that data I/O and communications control are possible (1-4) and each equipment between thing (4) which has a means to define a master-slave relation, and equipment between equipment is proposed.

[0004] These proposals were not the things [/ the copy with which manuscript classification, an output form, and an output media are intermingled] aiming at the high-definition-izing or improvement in operability. Furthermore, it was not a thing for unifying the image data inputted from two or more input devices about 3 and 4.

[0005] However, with the spread of full colour copying machines, the demand of high-definition-izing to a copying machine progresses, thereby, the present condition is that the demand of the image attribute parameter which should be specified to an input manuscript, or an output-processing format is increasing by leaps and bounds, and copy actuation of fulfilling all input image attribute and conditions of the input approach is difficult in one copy.

[0006] For example, when the manuscript (photograph manuscript) of the photograph base, the manuscript (alphabetic character manuscript) of *****-SU or the one side manuscript, and the double-sided manuscript are intermingled among a series of documents, the images alter operation which fitted these conditions by actuation once, such as a manuscript, a white manuscript, etc. with a deep substrate color, is difficult like a newspaper.

[0007] Moreover, although it was able to specify only about *****-JI [as opposed to / output media / an assignment manuscript] conventionally, it was difficult to specify media, such as OHP and pasteboard. However, in order to use the output media only for colors by the specification part in fact since he wants to incorporate color photography partially with the increment in a color copy, and progress of high-definition-izing, or to prevent double-sided flesh-side projection, use, then a request which was said are increasing pasteboard partially.

[0008] Moreover, it was difficult to perform a double-sided output and a rotation output only to the specified manuscript range also with an output method.

[0009] Although one means for solving these had the approach of classifying an input image for every input means, output media, and output form, performing the copy which suited each attribute, and unifying manually after termination altogether, this was that to which a throughput is remarkably reduced with former very troublesome time and effort.

[0010]

[Problem(s) to be Solved by the Invention] Network connection of two or more picture input devices and the image formation equipment is carried out, and transmission and reception of a control signal are possible for this invention also between which equipment, and it is specifying a master-slave relation between equipment. As opposed to the manuscript classification diversified under the environment where the operational parameter can be set up while supervising the operating state of a slave unit from a master unit, output-media assignment, and an output method It aims at offering the copy operating environment from which a high definition output is obtained that it can set [simply and] up quickly on the occasion of the copy with which those conditions are intermingled.

[0011] Moreover, although it is common conventionally to perform menu manipulation, such as to carry out the slanting cliff of the menu itself, so that it cannot choose on each menu screen when a specific function cannot be chosen with the combination of a function with a copying machine etc. In connecting two or more image formation equipment and input units and specifying those operational parameters from a master unit In order for a premise to read a manuscript with the same parameter as a master unit, as for the actuation screen of a near slave unit specified, it was common to have added an actuation limit so that a menu change might be impossible.

[0012] It is that enable modification of some of those control parameters also of a slave unit side, and it specifies an output media and an output form for every slave unit, and offers the environment suitable for more various input manuscripts and media at the same time this invention is made in view of this point, establishes a master-slave relation among two or more input devices connected in some means of communications, such as a network, and controls a slave unit from a master unit.

[0013] Moreover, output processing according to the needs that an output side also unifies the image data from various input devices, and those image attributes is needed with the improvement in flexibility of an input side. In this invention, the copy environment which was rich in the versatility which carried out through [of the I/O] by proposing the control approach for solving it is offered.

[0014]

[Means for Solving the Problem] The reading function to read a manuscript image at least in the system by which this invention consists of two or more connected equipments, On the processing conditions set up by the setting up function which sets up the processing conditions over the read image data, and this setting up function, the account of a top The 1st equipment which has the transmitting function which processes the read manuscript image and transmits, If the above-mentioned manuscript image which is connected to this 1st equipment and transmitted from the 1st equipment of the above is received The modification setting up function which changes the processing conditions set up by the setting up function of the 1st equipment of the above among the manuscript images received from the 1st equipment of the above, The 2nd equipment which has the image output function which processes to the above-mentioned manuscript image on the processing conditions changed by this modification setting up function, and outputs an image is provided.

[0015] In the image reading system to which two or more 1st equipments which have the reading function in which this invention reads a manuscript image at least, and the 2nd equipment which has the setting up function to which reading conditions are set at least are connected through the communication line A setting means by which have the reading function in which each 1st equipment of the above performs read of the above-mentioned manuscript based on the reading conditions supplied by the 2nd equipment of the above, and the 2nd equipment of the above sets up the reading conditions of the reading function in each 1st equipment of the above, It consists of an interface which outputs the reading conditions set up by this setting means to each 1st corresponding equipment of the above.

[0016] Two or more 1st equipments which have the reading function in which this invention reads a manuscript image at least, In the image processing system to which the 2nd equipment which has the setting up function which sets up reading conditions at least, and the 3rd equipment which has the image formation function which forms the image based on image data on an image formation-ed medium at least are connected through the communication line the 1st equipment of the above The scanner which performs read of the above-mentioned manuscript image based on the reading conditions supplied by the 2nd equipment of the above, It consists of the 1st interface which outputs the image data read with this scanner to the 3rd equipment of the above with the image formation conditions of the image data supplied by the 2nd equipment of the above. A setting means by

which the 2nd equipment of the above sets up the reading conditions over the reading function of each 1st equipment of the above, and the image formation conditions of the separate image data to each 1st equipment, It consists of the 2nd interface which outputs the reading conditions set up by this setting means, and image formation conditions to each 1st corresponding equipment of the above. It has image formation equipment with which the 3rd equipment of the above forms the image based on the image data supplied by the 1st equipment of the above on an image formation-ed medium based on the image formation conditions supplied with this image data.

[0017]

[Embodiment of the Invention] Hereafter, the image formation system applied to the operation gestalt of this invention with reference to a drawing is explained.

[0018] Drawing 1 and drawing 2 are the conceptual diagrams showing the example of the image formation structure of a system.

[0019] In this image formation system, two or more input units 1a, 1b, 1c, 1d, 1e, and 1f, such as a scanner, a personal computer, and a digital copier (image formation equipment), and -- are connected through the network 2.

[0020] Input-device (ID:0) 1a consists of digital copiers which also have a function as an output unit, and has the large capacity storage 3, such as Page Memory2 and HDD, and an airline printer 4.

[0021] 1f (ID:5) of input units has the large capacity storage 3, such as Page Memory2 and HDD.

[0022] In the example of this drawing, input unit (ID:0) 1a is specified as a master unit, and input units (ID:1-4) 1b, 1c, 1d, and 1e are specified as the slave unit. The print facility of a master unit is being used for an airline printer 4. It is shown that 1f (ID:5) of input units is not used in this drawing.

[0023] The image data inputted from input devices (ID:0-4) 1b, 1c, 1d, and 1e is once stored in the large capacity storage 3, such as HDD of master unit 1a. In this case, in the example to illustrate, the image data of slave units (ID:1-4) 1b, 1c, 1d, and 1e is coded data, and is stored in HDD3 through Page Memory2 of master unit 1a. It encodes through Page Memory2 and the image data inputted by master unit 1a is stored in HDD3.

[0024] At the time of a printout, it once reads to Page Memory2, and develops, and the encoded image data is outputted from an airline printer 4.

[0025] Drawing 3 is drawing showing structurally an example of the internal configuration of the above-mentioned digital copier (a multifunction mold reproducing unit, compound-die image formation equipment).

[0026] The automatic manuscript feed gear (ADF is called hereafter) 17 which serves as manuscript covering and sends one sheet-like manuscript at a time automatically is formed in the upper part of the body 10 of equipment free [closing motion]. The control panel 90 equipped with various actuation keys, various drops, etc. for directing copy initiation in a copy condition list is formed in the top-face anterior part of the body 10 of equipment. This control panel 90 is explained in detail later.

[0027] The sheet paper cassette 57 which can contain the form of small capacity, and the mass sheet paper cassette 55 which can contain a mass form are formed in the right-hand side section of the body 10 of equipment respectively free [attachment and detachment]. In addition, the sheet paper cassette 57 is equipped with the detachable tray 56 for supplying a form by manual bypass.

[0028] Sheet paper cassettes 12, 53, and 54 are formed in the lower part of the body 10 of equipment free [attachment and detachment]. The form of the same size is contained by the longitudinal direction and the lengthwise direction, and is chosen as these sheet paper cassettes of each if needed. The finisher 80 who receives a form [finishing / a copy] is formed in the left-hand side section of the body 10 of equipment.

[0029] Insertion opening (not shown) for inserting in the lower part of the control panel 90 of the whole surface of the body 10 of equipment the magneto-optic disk as a storage which memorizes image data etc. is prepared, and optical-magnetic disc equipment (not shown) is formed in the interior of a body.

[0030] A parallel port (not shown), a serial port (not shown), SCSI (not shown), etc. are prepared in the tooth back of the body 10 of equipment. A parallel port connects this equipment and external devices, such as PC (personal computer), in case this equipment operates as a printer. A serial port connects this equipment and external devices, such as PC (personal computer), for read-out of the internal management information of this equipment, and a functional setup of this equipment at the time of the maintenance of this equipment. SCSI performs a command/data communication between this equipment and an external printer controller (not shown).

[0031] In realizing a copy function and a facsimile function, in the body 10 of equipment, the scanner section 11 as an acquisition means to gain image data, and the printer section 12 as an image formation means are formed.

[0032] The manuscript installation base 13 which consists of transparent glass with which the reading object D, i.e., a manuscript, is laid, and ADF17 which sends a manuscript automatically on this manuscript installation base 13 are arranged in the top face of the body 10 of equipment. This ADF17 is arranged possible [closing motion] to the manuscript installation base 13, and functions also as an original cover which sticks the manuscript D laid in the manuscript installation base 13 on the manuscript installation base 13.

[0033] The empty sensor 9 by which ADF17 detects the manuscript tray 8 on which Manuscript D is set, and the existence of a manuscript, The pickup roller 14 which picks out one manuscript at a time from a manuscript tray, the ally NINKU roller pair which carries out ready grade of the tip of a manuscript to the feed roller 15 which conveys the taken-out manuscript -- with 16 It has the ally NINGU sensor (not shown) which is formed in the upstream of ally NINGU roller pair 16, and detects attainment of a manuscript, the size sensor (not shown) which detects the size of Manuscript D, and the conveyance belt 18 of the manuscript installation base 13 arranged so that the whole might be covered mostly. and the manuscript of two or more sheets set upward to the manuscript tray 8 is taken out sequentially from the lowest page, i.e., the last page, -- having -- an ally NINGU roller pair -- after ready grade is carried out by 16, it is conveyed with the conveyance belt 18 in the predetermined location of the manuscript installation base 13.

[0034] ADF17 -- setting -- the conveyance belt 18 -- inserting -- an ally NINGU roller pair -- the reversal roller 20, the noninverting sensor 21, the flapper 22, and the delivery roller 23 are arranged in the edge of 16 and the opposite side. The manuscript D with which image information was read by the scanner section 11 mentioned later is sent out from the manuscript installation base 13 with the conveyance belt 18, and is discharged on the manuscript delivery unit 24 of ADF17 top face through the reversal roller 20, a flapper 21, and the delivery roller 22.

[0035] Moreover, when reading the rear face of Manuscript D, the manuscript D conveyed with the conveyance belt 18 by switching a flapper 22 is again sent to the predetermined location on the manuscript installation base 13 with the conveyance belt 18, after it is reversed with the reversal roller 20.

[0036] In addition, ADF17 is equipped with the pickup roller 14, the feed roller 15 and the feed motor that drives ally NINGU roller pair 16, and the conveyance motor which drives the conveyance belt 18, the reversal roller 20, and the delivery roller 23.

[0037] The scanner section 11 arranged in the body 10 of equipment has the light source 25 of the fluorescent lamp which illuminates the manuscript D laid in the manuscript installation base 13, and the 1st mirror 26 which deflects the reflected light from Manuscript D in the predetermined direction. These light source 25 and 1st mirror 26 are attached in the 1st carriage 27 arranged down the manuscript installation base 13. On this 1st carriage 27, the size sensor 28 which detects the size of the manuscript laid on the manuscript installation base 13 is attached. The 1st carriage 27 is arranged movable in parallel with the manuscript installation base 13, and both-way migration of the lower part of the manuscript installation base 13 is carried out with a drive motor through the synchronous belt which is not illustrated.

[0038] Moreover, the 2nd movable carriage 29 is arranged in a manuscript installation base and parallel by the lower part of the manuscript installation base 13. The 2nd and 3rd mirrors 30 and 31 of each other which deflect in order the reflected light from the manuscript D deflected by the 1st mirror 26 on the 2nd carriage 29 are attached in the right angle. The 2nd carriage 29 is moved in parallel along the manuscript installation base 13 by the synchronous belt which drives the 1st carriage 27 at the rate of one half to the 1st carriage while following to the 1st carriage 27.

[0039] Moreover, down the manuscript installation base 13, the image formation lens 32 which converges the reflected light from the 3rd mirror 31 on the 2nd carriage 29, and the CCD sensor 34 which receives and carries out photo electric conversion of the reflected light which converged with the image formation lens are arranged. The image formation lens 32 is arranged movable through a drive in a field including the optical axis of the light deflected by the 3rd mirror 31, and carries out image formation for the scale factor of a request of the reflected light because self moves. And the CCD sensor 34 carries out photo electric conversion of the reflected light which carried out incidence, and outputs the electrical signal corresponding to the read manuscript D.

[0040] On the other hand, the printer section 12 is equipped with the laser aligner 40 which acts as an exposure

means. The laser aligner 40 is equipped with the polygon motor 37 as a scan motor which carries out a rotation drive at the predetermined rotational frequency which mentions later the polygon mirror 36 and the polygon mirror 36 as a scan member which deflects continuously the laser beam by which outgoing radiation was carried out from the semiconductor laser 41 as the light source, and semiconductor laser 41, and the photo conductor drum 44a-44d HE **** optical system 42 which deflects and mentions the laser beam from the polygon mirror 36 later. Such a laser aligner 40 of a configuration is fixed and supported by the support frame (not shown) of the body 10 of equipment.

[0041] according to the image information of the manuscript D read by the scanner section 11, on-off control of the semiconductor laser 41 is carried out -- having -- this laser beam -- the polygon mirror 36 and optical system 42 -- minding -- the photo conductor drum 44 -- it passes, respectively, and it is turned and a-44d of electrostatic latent images is formed on an each photo conductor drums [44a-44d] peripheral surface by scanning a photo conductor drums [44a-44d] peripheral surface.

[0042] Moreover, the image formation section 12 has the photo conductor drums 44a-44d in which the rotation as image support of the body 10 of equipment mostly arranged in the center is free, the laser beam from the laser aligner 40 is exposed, and a desired electrostatic latent image is formed in a photo conductor drums [44a-44d] peripheral surface.

[0043] The electrification charger 45 and -- which electrify a photo conductor drum 44a-44d peripheral surface in a predetermined charge in a photo conductor drums [44a-44d] perimeter, respectively, The development counter 46 which supplies the toner as a developer to the electrostatic latent image formed on the photo conductor drums [44a-44d] peripheral surface, and is developed by desired image concentration, and --, The exfoliation charger 47 for making the imprinted material to which paper was fed from sheet paper cassettes 52, 53, 54, 55, and 57 etc., i.e., copy paper P, separate from the photo conductor drums 44a-44d, and --, The imprint charger 48 and -- which make Form P imprint the toner image formed in the photo conductor drums 44a-44d, The exfoliation pawl (not shown) which exfoliates a copy paper from a photo conductor drums [44a-44d] peripheral surface, the cleaning equipment 50 which cleans the toner which remained to the photo conductor drums [44a-44d] peripheral surface and --, and the electric discharge machine 51 and -- which discharge a photo conductor drums [44a-44d] peripheral surface are arranged in order.

[0044] The sheet paper cassettes 52, 53, and 54 in which a cash drawer is possible are mutually arranged in the lower part within the body 10 of equipment by the laminating condition from the body 10 of equipment, respectively, and it is loaded with the copy paper from which size differs into each cassettes 52 and 53 and 54. The mass sheet paper cassette 55 is formed in the side of these cassettes 52, 53, and 54, and about 3000 sheets of copy papers of size with high operating frequency, for example, the copy paper of A4 size, are contained by this mass sheet paper cassette 55. Moreover, it is equipped with the sheet paper cassette 57 which served as the detachable tray 56 above the mass sheet paper cassette 55 free [desorption].

[0045] In the body 10 of equipment, the conveyance way 58 which extends through the imprint section located between the photo conductor drums 44a-44d and the imprint charger 48 from each cassette is formed, and the anchorage device 60 is formed in the termination of a conveyance way. An exhaust port 61 is formed in the side attachment wall of the body 10 of equipment which countered the anchorage device 60, and the exhaust port 61 is equipped with the finisher 80.

[0046] Near the sheet paper cassettes 52, 53, 54, 55, and 57, the pickup roller 63 which picks out one sheet of form at a time from a cassette is formed, respectively. moreover, the feed roller pair of a large number which convey copy paper P taken out with the pickup roller 63 through the conveyance way 58 in the conveyance way 58 -- 64 is prepared.

[0047] On the conveyance way 58, resist roller pair 65 is prepared in the photo conductor drums [44a-44d] upstream. Resist roller pair 65 adjusts the tip of the toner image on photo conductor drum 44a-44d, and the tip of copy paper P, and feeds copy paper P to the imprint section at the same rate as the passing speed of a photo conductor drum 44a-44d peripheral surface while it amends the inclination of taken-out copy paper P. The ally NINGU sensor 66 which detects attainment of copy paper P is formed in the side, resist roller pair this side 64 of 65, i.e., a feed roller.

[0048] copy paper P taken out one sheet at a time from each cassette with the pickup roller 63 -- a feed roller pair -- 64 -- a resist roller pair -- it is sent to 65. and copy paper P -- a resist roller pair -- after ready grade of the tip is carried out by 65, it is sent to the imprint section with the conveyance belt 67.

[0049] In the imprint section, the developer image formed on photo conductor drum 44a-44d, i.e., a toner image, is imprinted on Form P by the imprint charger 48. Copy paper P by which the toner image was imprinted exfoliates according to an operation of the exfoliation charger 47 and an exfoliation pawl (not shown) from a photo conductor drum 44a-44d peripheral surface, and is conveyed by the anchorage device 60 through the conveyance belt 67 which constitutes a part of conveyance way 58. and copy paper [after melting fixing of the developer image was carried out by the anchorage device 60 at copy paper P] P -- a feed roller pair -- it is discharged by 68 and delivery roller pair 69 through an exhaust port 61 to a finisher's 80 paper output tray 81.

[0050] copy paper P which passed the anchorage device 60 down the conveyance way 58 -- being reversed -- again -- a resist roller pair -- the automatic double-sided equipment (ADD) 70 sent to 65 is formed. Automatic double-sided equipment 70 temporarily accumulate copy paper P temporarily The accumulation section 71, The reversal way 72 which branches from the conveyance way 58, reverses copy paper P which passed the anchorage device 60, and is led to the accumulation section 71 temporarily, the pickup roller 73 which takes out at a time one copy paper P accumulated on the accumulation section temporarily, and the taken-out form -- the conveyance way 74 -- letting it pass -- a resist roller pair -- it has the feed roller 75 fed to 65. Moreover, the distribution gate 76 which distributes copy paper P to an exhaust port 61 or the reversal way 72 alternatively is established in the tee of the conveyance way 58 and the reversal way 72.

[0051] the pickup roller 73 when a double-sided copy was performed, after copy paper P which passed the anchorage device 60 was led to the reversal way 72 by the distribution gate 76 and the accumulation section 71 was temporarily piled up in the condition of having been reversed, and feed roller pair 75 -- the conveyance way 74 -- letting it pass -- a resist roller pair -- it is sent to 65. and copy paper P -- a resist roller pair -- after ready grade is carried out by 65, it is again sent to the imprint section and a toner image is imprinted by the rear face of copy paper P. Then, copy paper P is delivered to a finisher's 80 paper output tray 81 through the conveyance way 58, an anchorage device 60, and the delivery roller 69.

[0052] Moreover, by using this automatic double-sided equipment 70, the field where the form was printed can be turned down and can also be discharged. that is, in the way which performs a double-sided copy, first, an image is imprinted and fixed to a form front face, and the intensive section 71 is piled up temporarily -- making -- a pickup roller 73 and feed roller pair 75 -- the conveyance way 74 -- letting it pass -- a resist roller pair -- after ready grade is carried out by 265, paper is delivered to a finisher's 80 paper output tray 81 through the conveyance way 58, an anchorage device 60, and the delivery roller 69.

[0053] Drawing 4 is the block diagram showing the configuration of the control system of the above-mentioned digital copier.

[0054] this digital copier -- a system CPU 100 and a flash ROM (the object for program stores --) 101 for data storage, a font ROM 102, nonvolatile RAM (NVRAM) 103, and DRAM (a working-level month --) as a work piece RAM 104 for data storage, a scanner interface (SIF) 105, the image-processing unit IPU () [Image] It is constituted by Processing Unit:IPU106, a printer interface (PIF) 107, the above-mentioned scanner section 11, the above-mentioned printer section 12, the image bus 108, the system bus 109, the page memory unit 111, and the HDD unit 112.

[0055] The above-mentioned printer section 12 is connected to a printer controller (PRNC) 110 through a circuit, and this printer controller 110 is connected to the above-mentioned network (LAN) 2.

[0056] The above-mentioned system CPU 100 controls the whole digital copier, and controls each function here according to the input signal from the directions from a control panel 90 and the signal input from a communication line, and various external interfaces.

[0057] The scanner interface (SIF) 105 is an interface which receives the image data from the scanner section 11.

[0058] The image-processing unit (Image Processing Unit:IPU) 106 is the image-processing section which performs image edit processing of the high definition-ized processing according to the printer section 12, enlarging-or-contracting processing, pixel infanticide processing, void processing of the appointed field by marker appearance, etc.

[0059] Each of these devices are connected through the image bus 108, and, as for the control signal between a system CPU 100 and each device, an exchange of a signal is performed at a high speed by the system bus 109.

[0060] In order to have formed this image bus 108 the sake [in case this equipment operates as a copying machine] and to guarantee [peculiar] real-time actuation of a copying machine, the image data inputted from

the scanner section 11 is received by SIF105, high definition-ized processing, enlarging-or-contracting processing, and various edit processings are performed in IPU106, and actuation which is a printer in PIF107 of outputting is performed in juxtaposition (it is called a basic copy). A processing board unnecessary for the actuation at that time among the boards connected to the image bus 108 will be in a passage condition.

[0061] Moreover, a printer controller (PRNC) 110 has an interface with the printer section 12 which controls the image formation function at the time of a copy or printer actuation. Moreover, it connects with coincidence through devices, such as NIC (Network Interface Card), in the above-mentioned network 2. Protocol control for buffering reception and data and carrying out data transfer of the print data to the printer section 12 through devices, such as external PC, to the above-mentioned network 2, data transfer control, compression control of data, and elongation control of data are performed.

[0062] The page memory unit 111 consists of various kinds ASIC which perform rotation processing of 90 degrees, 180 degrees, 270 etc. degrees, etc. to the compression elongation circuit and image data which compress or elongate the page buffer for accumulating temporarily the image data inputted from the scanner section 11, and the image data read from the HDD unit 112 at the time of printing, and image data, a buffer for rotation, etc.

[0063] Drawing 5 is drawing showing the configuration of a control panel 90. As shown in this drawing, the mode-of-operation selection key 99 which chooses as a control panel 90 modes of operation, such as the touch panel display 91, a start key 92, a stop key 93, a clear key 94, the ten key 95 that sets up a figure, the key 96 which chooses a manuscript size cassette, LED97 which displays the selected manuscript size cassette, the copy scale-factor setting key 98, FAX, or a printer, is formed. Moreover, as for this ten key 95, that it can share also between a copy also by FAX serves as the same arrangement as the ten key array of a key telephone set as.

[0064] For example, when copying the 5 sections, after changing the menu on the touch panel display 91 to a copy and choosing processing [to wish] (double-sided copy etc.), the key of "5" of a ten key 95 is pressed. Then, this number is displayed on the specific area on the touch panel display 91. After a user checks this, copy actuation will be started, if a manuscript is set and a start key 92 is pushed.

[0065] Drawing 6 is the block diagram showing the configuration of the control system of the touch panel display 91 mentioned above.

[0066] The touch panel display 91 is constituted by CPU120, ROM (the object for program stores, for data storage)121, DRAM (a working-level month, for data storage)122 as a work piece RAM, VRAM123 as RAM for a display, the touch panel controller 124, and the display controller 125.

[0067] CPU120 controls the whole touch panel display 91, and the touch panel display 91 is constituted in piles on a liquid crystal display 127 in a touch panel 126. A touch panel 126 applies a transparence resistor to a transparence base uniformly, sets predetermined distance spacing in the direction of X/Y, respectively, and has arranged the transparent electrode group in it in parallel.

[0068] As for this touch panel 126, an electrical potential difference is impressed to each transparent electrode of the basis of control of the touch panel controller 124, and the direction of X/Y one by one in the fixed direction, respectively. Directions actuation of a location to a touch panel 126 is performed using the conductive pen or finger of dedication. The touch panel controller 124 supervises each inter-electrode resistance of the direction of X/Y, and detects the location which resistance reduced locally with directions of a conductive pen or a finger by the operation from each inter-electrode resistance.

[0069] Moreover, RAM (VRAM)123 for a display which stores an indicative data per display pixel with the display controller 125 for carrying out the display drive of this is connected to the liquid crystal display 127, respectively.

[0070] In the touch panel display 91 which consists of the above configuration, the location data called for by the touch panel controller 124 are read by CPU120, and processing corresponding to this location data is performed by CPU120. For example, when performing a handwriting input, the data on VRAM123 corresponding to the location directed on the touch panel 126 are reversed from a non-display condition, and it changes into a display condition, and this touch panel display 91 can be used for broad applications, such as a CRT display unit with keyboard displayed on the liquid crystal display 127, and an input of the operational parameter by the selection out of various setup-key groups.

[0071] Drawing 7 - drawing 9 are drawings showing an example of the parameter check screen displayed by the slave unit (b [1]-1f) side through the procedure of drawing 38 mentioned later about the operating condition

specified with the master unit (1a).

[0072] As shown here, it classifies into the image attribute information (reading conditions) as an operating condition, output-media information (image formation conditions), and output-form information (image formation conditions), about the parameter in which a chart example and modification are possible, it iconifies and modification of a parameter is permitted, about what cannot be changed, an icon frame is dotted-line-ized and the contents of the parameter are specified.

[0073] Image attribute information is the conditions of manuscript read, and is manuscript classification information, such as concentration information, a photograph manuscript, or an alphabetic character manuscript, the adjustment value information at the time of a gamma correction, etc.

[0074] Output-media information is conditions which specify the class of copy paper, and serves as pasteboard, paper only for colors, a regular paper, OHP, etc.

[0075] Output-form information is the conditions in the case of a printed output, and serves as paginal order or a reverse order of a page in the print to one side of the above-mentioned copy paper, the print to both sides of a copy paper, rotation of image data, reversal of image data, and the image data for two or more pages.

[0076] As image attribute information, as shown in drawing 8, an input method, color mode, manuscript mode, concentration adjustment, manuscript size, a scale factor, color adjustment, edit, etc. are displayed. In this case, to an input method, "ADF" and "modification" are expressed as a continuous line, and it can change. To color mode, "full color" and "modification" are expressed as a continuous line, and it can change. To manuscript mode, a "photograph" and "modification" are expressed as a continuous line, and it can change. To concentration adjustment, "automatic concentration" and "modification" are expressed as a continuous line, and it can change. To manuscript size, "A4" and "modification" are expressed as a continuous line, and it can change. To a scale factor, "71%" and "modification" are expressed as a continuous line, and it can change. To color adjustment, "with no adjustment" and "modification" are expressed as a continuous line, and it can change. To edit, "tone reversal" and "modification" are expressed as a continuous line, and it can change. To edit, "with no assignment" and "modification" are expressed as a continuous line, and it can change. To edit, a "binding margin" and "modification" are expressed as a broken line, and it cannot change.

[0077] As output-media information, as shown in drawing 7, class [of output media] and feeding origin is displayed. In this case, to an output media, "pasteboard 1" and "modification" are expressed as a continuous line, and it can change. To the agency feeding paper, "the 1st cassette" and "modification" are expressed as a broken line, and it cannot change.

[0078] As output-form information, as shown in drawing 9, a rotation output, a double-sided output, finishing, and sort mode are displayed. In this case, to a rotation output, "90 degrees" and "modification" are expressed as a continuous line, and it can change. To a double-sided output, "one side" and "modification" are expressed as a continuous line, and it can change. To finishing, "a staple" and "modification" are expressed as a broken line, and it cannot change. To sort mode, "a sort" and "modification" are expressed as a broken line, and it cannot change.

[0079] Drawing 10 shows the functional module block diagram which constitutes the input device of this invention.

[0080] The above-mentioned digital copier is constituted by the whole control section 130, the machine status management section 131, a display and control section 132, the data transfer control section 133 between external devices, the input/output operation control section 134, the scanner control section 135, the printer control section 136, the image data storage section 137, and the management information Records Department 138.

[0081] In this drawing, the scanner section 11 and the scanner control ASIC, the scanner control firmware that performs scanner drive control at the time of an image input, ADF (Auto Document Feeder: automatic manuscript feed gear) control, etc. further, a shading compensation, etc. are constituted in the scanner control section 135 by the image-processing unit for pretreatment.

[0082] It consists of the printer section 12 and the printer control ASIC, an output side image processing ASIC, printer motion-control firmware that performs the printer control at the time of printing, a paper transfer control, etc. further, and printer side image-processing firmware in the printer control section 136. The printer control section 136 has an interface between printer controllers 110, and performs command communication link of control command, the status, etc., and communications control of print data. Moreover, execution control of the

both sides of the printout of the image data inputted from the scanner section 11 and the image data output transmitted from the printer controller 110 is performed.

[0083] Although these scanner control sections 135 and printer control sections 136 had Control CPU and have realized high-speed control respectively, these performed the command-status communication link between the systems CPU 100 in drawing 4 , and they controlled the synchronous operation of a display, the scanner section 11, and the printer section 12 etc., and have realized copy actuation as the whole equipment, and printout actuation.

[0084] The input/output operation control section 134 performs calculation of an image-processing parameter, and a setup of image-processing unit 106 HE, and controls a copy function at the same time it has an interface with the scanner control section 135 or the printer control section 136 and performs drive timing control of the scanner section 11 and the printer section 12 by making into a trigger the initiation instruction of operation received from the whole control section 130, including the image-processing unit 106. Timing control means qualification processing of the image developed in the drive timing of ADF17, scanner drive timing, and memory, assignment of printing initiation timing, input initiation timing assignment of the following manuscript, etc. Moreover, reservation/release command about the printer resource received from the display and control section 132 etc. is notified to the printer control section 136.

[0085] A display and control section 132 consists of display-control software for controlling the control panel 90 of this equipment explained by drawing 5 and drawing 6 , and them. While telling the actuation information on a control panel 90 to the whole control section 130, the various changes of state generated to equipment are made to reflect in a reception display as information from the machine status management section 131, and processing results and the information about progress, such as a copy result, number of copies in a copy, and size information, are made to reflect in a reception display from the whole control section 130 here. This reflection approach specifically means lighting of LED on a control panel 90, and the message indicator to LCD127.

[0086] In the whole control section 130, the operating state of the whole equipment is always supervised further, and exclusive control of the resource shared between two or more set ability, such as the scanner section 11 and the printer section 12, copy, priority actuation of print data printing, screen change actuation, etc. are carried out. For example, at the whole control section 130, in the scene of enabling activation of a copy preferentially when the screen of a copy is operating it, if fixed period print data printing is forbidden or print data printing starts conversely, a screen will be switched to a display during printing and copy activation will be restricted. Moreover, in the whole control section 130, time control, such as a timer monitor, is also performed and change control of a menu etc. is suitably performed to a display and control section 132 according to a condition.

[0087] In the machine status management section 131, it is the condition of the machine notified from the scanner control section 135 or the printer control section 136, and specifically supervising information, such as a paper jam, JAM discharge, and front-cover closing motion, and notifying to the whole control section 130 or a display and control section 132, and an Error condition is made to reflect in a display, or is made to reflect in activation propriety decision of copy actuation.

[0088] Moreover, the machine recovery actuation at the time of Error discharge and JOB termination is managed with directions of the whole control section 130. The recovery actuation in this case shows housekeeping operation for performing the next COPY, such as initialization of the indicator location of the scanner section 11, and warming up actuation of the heating roller section.

[0089] The data transfer control section 133 between external devices consists of a control signal with the scanner section 11 connected through LAN, the printer section 12, or a digital copier, and communications control software of image data including the LAN I/F section. The LAN I/F section is constituted by NIC (Network Interface Card), buffer memory, etc.

[0090] The management information Records Department 138 of a master unit is constituted by image file managed table 138a, a Copy attribute / format / medium information table 138b, device-management table 138c, and airline printer managed table 138d.

[0091] The management information Records Department 139 of a slave unit is constituted by input operation managed table 139a, a Copy attribute / format / medium information table 139b, device-management table 139c, and airline printer managed table 139d.

[0092] Drawing 11 is transmitted to a master unit from a slave unit, and shows the conceptual diagram of the image data managed in the image data storage section 137. The image data transmitted to the master unit from the slave unit is stored in the field beforehand secured fixed on the image data storage section 137 of a master unit. Information, such as the number of **-JI currently described all over drawing, an ID number, and a master/slave, is managed by the Copy attribute / format / medium information table 138b shown in drawing 13 and drawing 14.

[0093] By drawing 11, including a master unit, it is regarded as that as which image data is inputted into the ascending order of the ID number assigned by all input devices, the page of the inputted image data file is unified mechanically, and dealing with it as one input manuscript finally is shown. Specifically, the equipment of ID:0 shows that the equipment of ID:1 is [the following 32 pages and the equipment of ID:2] the following 41 pages to head -31 page to the 108-page input manuscript.

[0094] Drawing 12 - drawing 17 show the example of mounting of the management information Records Department 138 in a master unit.

[0095] The airline printer is set to image file managed table 138a when the pagination of the image data inputted with each input device, the operating state of the Copy actuation [itself], and an airline printer are specified, as shown in drawing 12.

[0096] As shown in drawing 12, for example, JOBID "0x01", input unit information "0x0C", Pagination (equipment 0) "0x1F", pagination (equipment 1) "0x20", Pagination (equipment 2) "0", pagination (equipment 3) "0x29", pagination (equipment 4) "0", Pagination (equipment 5) "0", pagination (equipment 6) "0", pagination (equipment 7) "0", input operation condition "under input", total page "0x68", and output unit assignment "0x05" is registered.

[0097] As shown in drawing 13 and drawing 14, the operating-condition parameter (operating-condition information) set up for every image formation equipment and input unit is stored in a Copy attribute / format / medium information table 138b. In advance of image data transmission, Copy attribute information / output-media information / output-form information is sent to a master unit from a slave unit, and such information is stored in this table, when the contents set up with the master unit are sent to a slave unit side and a change of an item is made by the slave unit side as the flow chart of drawing 28 mentioned later - drawing 31, drawing 32 - drawing 34 explained. Furthermore, this information is sent to an airline printer in advance of image data transfer at the time of airline printer assignment, and is referred to at the time of a printout.

[0098] For example, as shown in drawing 13 and drawing 14, the image attribute information for every input unit, medium information, and output-form information are registered. Image attribute information consists of the modes, such as a format of an input-device number, JOBID, a file name, pagination, manuscript size, a scale factor, a color or black, JPEG, etc., concentration adjustment, color adjustment, edit, edit, edit, a photograph, and an alphabetic character. Medium information consists of media [, such as pasteboard and a regular paper,] and feeding origin. Output-form information consists of a rotation output, a double-sided output, finishing, and sort mode. Manual bypass, a cassette, etc. are registered as an agency feeding paper.

[0099] As shown in drawing 13 and drawing 14, for example, an input unit number "0x00", JOBID "0x01", a file name "1 0 ***.jpg", Pagination "0x1F", an input method "ADF", manuscript size "A4", A scale factor "71", a color or black "a color", a format "JPEG", Concentration adjustment "automatic concentration", color adjustment "with no adjustment", edit "tone reversal", "The 1st cassette", rotation "90 degrees" and an output, a double-sided output "one side", finishing "a staple", and sort mode "a sort" are registered edit "binding margin", edit "with no assignment", mode "photograph", media "pasteboard", and feeding origin.

[0100] As shown in drawing 15 and drawing 16, the information on each image formation equipment by which network connection was carried out, and an input unit is stored in device-management table 138c. Each equipment communicates mutually as initial information at the time of starting, and such information exchanges information, and stores the acquired information. During actuation, each equipment will broadcast a change of state to all equipments, if operating state, such as waiting, working, and Machine Error, changes, and each equipment updates the received information. Moreover, Error information etc. is stored if it is [master / slave unit information, inputted pagination information, and Error] under generating. The device-status display screen shown by drawing 23 performs renewal of a display with reference to the information stored in this table.

[0101] For example, as shown in drawing 15 and drawing 16, assignment of an input-device number, operating

state, an error number, input pagination, an IP address, PWD, an option, memory size, device identification ID, and a master/slave unit and assignment of an output unit are registered for every input device. Assignment "a master" of an input-device number "0x00", operating state "under use", an error number "0x00", input pagination "0x1F", an IP address "192.168. ***", PWD "*****", an option "ADF", memory size "3GB", device identification ID "0", and a master/slave unit and assignment "0x00" of an output unit are registered. As the above-mentioned operating state, they are working ["working"] "during use", a "error situation", etc.

[0102] As shown in drawing 17 R> 7, the engine-performance information as airline printer engine-performance information and operating state, an Error condition, output-media information, etc. are stored in airline printer managed table 138d. This information stores the information sent from an airline printer at the time of airline printer assignment.

[0103] As shown in drawing 17 , for example, an output unit number "0x05", operating state "an opening", The color engine performance "full color", an error number "0x00", output pagination "0xFF", An IP address "192.168. ***", PWD "*****", ON of double-sided equipment, OFF "ON", ON of a sorter, OFF "ON", ON of a staple, OFF "ON", The possibility of a rotation output of, an impossibility "possible", memory space "3GB", the size of a mass sheet paper cassette "A4", The 1st cassette size "A4R", the 1st cassette medium "Normal", the 2nd cassette size "A3", The 2nd cassette medium "Normal", the 3rd cassette size "A4", the 3rd cassette medium "pasteboard", the 4th cassette size "B4", the 4th cassette medium "Normal", manual paper feed size "A4", and a manual paper feed medium "the paper only for colors" are registered.

[0104] Drawing 18 - drawing 21 show the example of mounting of the management information Records Department 139 in a slave unit.

[0105] As shown in drawing 18 R> 8, JOBID, master unit information, inputted pagination, operating state, an error type, slave unit assignment, and master unit assignment are registered into input operation managed table 139a.

[0106] For example, as shown in drawing 18 , JOBID "0x01", master unit information "0x00", inputted pagination "0x0F", operating state "under use", an error type "0xFF", slave unit assignment "0x01", and master unit assignment "0x00" are registered.

[0107] As shown in drawing 19 , the operating-condition parameter set up for this every equipment is stored in a Copy attribute / format / medium information table 139b. The contents set up with the master unit are sent to a slave unit side, and an item can be changed by the slave unit side.

[0108] For example, as shown in drawing 19 , image attribute information, medium information, and output-form information are registered. Image attribute information consists of the modes, such as a format of an input-device number, JOBID, a file name, pagination, manuscript size, a scale factor, a color or black, JPEG, etc., concentration adjustment, color adjustment, edit, edit, edit, a photograph, and an alphabetic character. Medium information consists of media [, such as pasteboard and a regular paper,] and feeding origin. Output-form information consists of a rotation output, a double-sided output, finishing, and sort mode. Manual bypass, a cassette, etc. are registered as an agency feeding paper.

[0109] An input unit number "0x00", JOBID "0x01", a file name "1 0***.jpg", Pagination "0x1F", an input method "ADF", manuscript size "A4", A scale factor "71", a color or black "a color", a format "JPEG", Concentration adjustment "automatic concentration", color adjustment "with no adjustment", edit "tone reversal", "The 1st cassette", rotation "90 degrees" and an output, a double-sided output "one side", finishing "a staple", and sort mode "a sort" are registered edit "binding margin", edit "with no assignment", mode "photograph", media "pasteboard", and feeding origin.

[0110] it is shown in device-management table 139c at drawing 20 -- as -- device-management table 138c -- the same -- the information on each image formation equipment by which network connection was carried out, and an input unit is stored. Each equipment communicates mutually as initial information at the time of starting, and such information exchanges information, and stores the acquired information. The same information as device-management table 138c mentioned above is registered into device-management table 139c.

[0111] it is shown in airline printer managed table 139d at drawing 21 R> 1 -- as -- airline printer managed table 138d -- the same -- airline printer engine-performance information and operating state, an Error condition, output-media information, etc. are stored. This information is stored by notifying airline printer information from a master unit at the time of assignment of a slave unit. The same information as airline printer managed table 138d mentioned above is registered into airline printer managed table 139d.

[0112] In a slave unit side, the parameter check screen shown in drawing 7 - drawing 9 is created and displayed with reference to this information.

[0113] Drawing 22 is drawing showing a control flow between a master unit and a slave unit. An input device (0) is a master unit and this drawing shows that an input device (1) and (3) are used as a slave unit, and an input device (2) is using it for another application.

[0114] If an input unit (2) is used, the change of state of an input unit (2) will be notified (a of drawing 22), and the display of an input unit (2) will be reversed as an input unit in use like the display of the control panel 90 shown in the upper left in drawing, and drawing 23 .

[0115] If a vacant input unit (1) and (3) are chosen, control acquisition is performed (from b of drawing 22 , and "an input unit secured demand" of step 45 of drawing 29 to step 46), and if usable, ACK (reception) will be notified to a master unit from an input unit (1) and (3) (c of drawing 22 , step 91 of drawing 32). Thereby, as shown in drawing 24 , an input unit (1) and the display of (3) reverse the control panel 90 in which the equipment operating condition of an input unit (0) is shown.

[0116] Then, the operating condition (the airline printer engine performance, image input parameter) of an input device (0) is notified from an input device (0) to an input device [finishing / slave assignment] (1) and (3) (from d of drawing 22 , and step 47 to step 48 of drawing 29). Thereby, an operating condition is registered into an input unit (1) and (3) (from step 94 to step 95 of drawing 32). ACK is notified to an input unit (0) from an input unit (1) and (3) after this registration (e of drawing 22 , steps 97 and 98 of drawing 32).

[0117] Under the present circumstances, as the operating condition notified from the input unit (0) shows drawing 7 - drawing 9 with the control panel 90 of an input unit (1) and (3), it is displayed as a parameter check screen. It classifies into image attribute information, output-media information, and output-form information as this parameter check screen, and is indicated by list.

[0118] Moreover, if the input unit (1) and (3) side has setting modification, it will change. For example, in the parameter check screen of the image attribute information on drawing 8 , a setting change is made from "it is full color" by pushing "modification" to color mode at "black." As the above-mentioned setting modification, these contents of modification are notified to an input unit (0) from an input unit (1) and (3) (from f of drawing 22 , and step 109 to step 111 of drawing 33).

[0119] Then, image data is inputted from (initiation of an image input, i.e., an input device, (1), and 3). Termination of the image entry of data for 1 page transmits this image data to an input unit (0) from an input unit (1) and (3) (g of drawing 22 , step 112 of drawing 33). At the time of this image data transfer termination for 1 page, End of Page is notified to an input unit (0) from an input unit (1) and (3) (h of drawing 22 , step 116 of drawing 34).

[0120] When an input device (0) performs error correction processing to the image data for supplied 1 page etc. and is registered into the image data storage section 137 after End of Page was notified, it notifies the information which shows the above-mentioned image data transfer O.K. to an input device (1) and (3) (i of drawing 22).

[0121] After repeating this till all page termination and completing all page inputs and transfers, End of File is notified to an input unit (0) (j of drawing 22 , step 118 of drawing 34).

[0122] When an input device (0) performs error correction processing to the image data for supplied 1 page etc. after the notice of End of File and is registered into the image data storage section 137, it notifies the information which shows the above-mentioned image data transfer O.K. to an input device (1) and (3) (k of drawing 22).

[0123] Then, an input unit (0) cancels slave unit assignment of as opposed to release (l of drawing 22 , step 68 of drawing 31 R> 1) (1), i.e., an input unit, and (3) for the control of the corresponding input unit (1) and (3) (from step 119 to step 122 of drawing 34).

[0124] Drawing 23 is drawing having shown the example of a configuration of the machine status-display screen in a master unit. In this example, current and equipment 2 are conditions during actuation, equipments 7 and 8 are in the condition of not registering (un-detecting), and it is shown that other input units, a reproducing unit, and an airline printer are in an usable condition. As shown in drawing 22 , if the equipment to be used is chosen, as shown in drawing 24 , the display of an icon will be here, reversed [with a sequence / it will be in a secured condition (busy status) as a slave unit, and].

[0125] Drawing 25 is drawing showing the example of the network formation between equipment also in an

initialization sequence.

[0126] A power source is switched on in equipment (0), equipment (1) - (5) is beforehand registered into equipment (0), and this drawing shows that it is in the condition that equipment (5) is not started.

[0127] If the power source of equipment (0) is switched on first, Initial Command will be sent to all equipment (1) - (5). In the equipment (1) - (5) side which received Initial Command, the communication link information on the equipment (0) which has transmitted Initial Command is initialized, and its own condition is notified to the equipment (0) of Initial Command transmitting origin as Engine Status. If Engine Status is received, equipment (0) will notify its own option information, Error information, etc. to all equipment (1) - (5) with a response as Initial Status.

[0128] In this example, since equipment (5) is not started, a response does not return but the retry is performed twice. By two retries, when there was no response, abnormalities were in the network, or it judges power-source un-supplying, and from equipment (5), the communication link with this equipment (5) is not performed until it initializes reception and a communication link condition for Initial Command.

[0129] Drawing 26 is a flow chart which shows the control procedure by the side of the whole control section 130 at the time of starting.

[0130] If the whole control section 130 is started, it will initialize a system. System initialization shows the initial sequence generic name like initialization processing of equipment itself required before initiation of operation, such as initialization of the parameter table used in common by each module, semaphore generation, H/W option wearing check processing, and data clean-up of a hard disk, and the milieu therapy of operation like formation of network connection. About the network connection formation in an initialization sequence flowing, an example is shown in drawing 25.

[0131] First, if a system is initialized (ST1), the whole control section 130 will serve as waiting for a message (ST2), and will choose processing suitably according to the message class sent from other modules.

[0132] When the condition of equipment changes, specifically Error condition generating / discharge of a paper jam etc., When the actuation condition of equipment changes at the time of change-of-state reception of other equipments (during actuation) If messages, such as initiation/termination of the fixing assembly heater heating condition of equipments, such as waiting and under interruption and actuation, are received (ST3), the whole control section 130 will perform message reception at the time of the actuation change of state shown in drawing 27 (ST4).

[0133] Moreover, if a master unit control related message is received (ST5), the whole control section 130 will perform copy control message reception at the time of the master unit assignment shown in drawing 28 - Fig. 3131 (ST6).

[0134] If slave device control related commands are received (ST7), the whole control section 130 will perform reception of the copy control message at the time of the slave unit assignment shown in drawing 32 - drawing 34 (ST8).

[0135] Although processing is suitably chosen at the time of other message reception (ST9), in order that there may be no real relation to this invention, it omits by this explanation.

[0136] Drawing 27 is a processing flow chart which shows the control procedure at the time of reception of the change-of-state message in the whole control section 130.

[0137] The whole control section 130 updates the operating state of device-management table 138c, and returns to step 2 while it will notify that it is in an Error condition to other equipments by which directed the Error display to the display and control section 132 (ST12), then network connection was carried out (ST13), if Error generating is received from the machine status management section 131 (ST11).

[0138] Moreover, like the depression of a control panel, if a certain actuation change of state is notified from the machine status management section 131 or a display and control section 132 (ST14), the whole control section 130 will update the operating state of device-management table 136c during waiting/actuation, while notifying the actuation conditions under /working / interruption etc. to other equipments (ST15) (ST16).

[0139] Next, when the change of state of other equipments is received through the data transfer control section 133 between external devices (ST17), the whole control section 130 updates the operating state of device-management table 138c (ST18), notifies other device-statuses change to a display and control section 132 (ST19), and returns to step 2. Although not illustrated, when other device statuses are being displayed, by the display and control section 132, this notice performs renewal of a display.

[0140] The whole control section 130 updates the operating state of device-management table 138c, and directs recovery processing of equipment in the machine status management section 131 while it will notify Error condition discharge to a display and control section 132 (ST21), if Error discharge is received (ST20) (ST22). Recovery processing of equipment means processing of the discharge check by the sensor, heating of an anchorage device, reset of the scanner section 11, reset of an imprint unit, etc. Next, it notifies that it is during recovery to each equipment by which network connection is carried out (ST23), and returns to step 2.

[0141] Reception of equipment recovery termination notifies recovery processing termination to a display and control section 132 (ST25). (ST24) Moreover, the operating state of device-management table 138c is updated, recovery processing termination is notified to each equipment by which network connection is carried out (ST26), and it returns to step 2.

[0142] Drawing 28 - drawing 31 are drawings showing the processing flow chart at the time of the copy control in a control section 130, when [whole] specified as a master unit.

[0143] If a master unit is specified (ST30), the whole control section 130 will set a master unit flag to device-management table 138c (ST31), and will return to step 2. Moreover, also when the master unit flag is not set to device-management table 138c (ON), it returns to (ST32) and step 2.

[0144] At the above-mentioned step 32, when the master unit flag is set to device-management table 138c (ON), it notifies that the whole control section 130 became a master unit at other equipments (ST33). Other equipments by this are usable as a slave.

[0145] After the notice by the above-mentioned step 33, when an airline printer is specified from a display and control section 132 (ST34), the whole control section 130 directs the specified airline printer to the data transfer control section 133 between external devices (ST35). The response based on these directions is received (ST36), and when an airline printer is able to be secured (ST37), the whole control section 130 updates device-management table 138c (ST38), and receives airline printer engine-performance information (ST39). The whole control section 130 sets the received airline printer information to airline printer managed table 138d (ST40). Then, the whole control section 130 notifies the completion of airline printer secured to a display and control section 132 (ST41).

[0146] Even if the response based on directions of the above-mentioned step 35 carries out predetermined time progress, when it cannot receive (ST42), the whole control section 130 notifies an airline printer secured impossibility to a display and control section 132 (ST44).

[0147] In the above-mentioned step 37, when an airline printer is not able to be secured, the whole control section 130 notifies an airline printer secured impossibility to a display and control section 132 (ST44).

[0148] Even if reception of the airline printer engine-performance information by the above-mentioned step 39 carries out predetermined time progress, when it cannot do (ST43), the whole control section 130 notifies an airline printer secured impossibility to a display and control section 132 (ST44).

[0149] It returns to step 2 after the notice by the above-mentioned step 44.

[0150] After the notice by the above-mentioned step 33, when reservation of an input unit is directed by the display and control section 132 (ST45), the whole control section 130 directs reservation of an input unit to the data transfer control section 133 between external devices (ST46). Then, the whole control section 130 notifies the image input parameter and airline printer engine performance which are shown in the specified input device at drawing 13 R> 3 and drawing 14 and which were set as a Copy attribute / format / medium information table 138b (STs 47 and 48).

[0151] After this notice, when a response can be received (ST49) and the corresponding equipment can be secured (ST50), the whole control section 130 updates the equipment information on device-management table 138c (ST51), notifies the completion of secured of the input unit applicable to a display and control section 132 (ST52), and returns to step 2.

[0152] Even if it carries out predetermined time progress at the above-mentioned step 49, when a response is not received (ST53), the secured impossibility of an input unit is notified to a display and control section 132 (ST54), and it returns to step 2.

[0153] Moreover, when the input unit which corresponds at the above-mentioned step 50 is not securable, the secured impossibility of an input unit is notified to a display and control section 132 (ST54), and it returns to step 2.

[0154] When the transmitting initiation demand (data transfer demand reception) of the inputted image data is

received through the data transfer control section 133 between external devices after the notice by the above-mentioned step 33 from the input device by which slave assignment was carried out (ST55), the whole control section 130 acquires the input image attribute information sent through the data transfer control section 133 between external devices, output-media information, and output-form information (STs 56, 57, and 58). Then, the whole control section 130 updates a Copy attribute / format / medium information table 138b using the acquired input image attribute information, output-media information, and output-form information (ST59). Furthermore, the whole control section 130 updates the operating state of device-management table 138c working (ST60).

[0155] After this updating, if the whole control section 130 is in the condition in which Data reception is possible (ST61), it will notify Data ability ready for receiving to a slave unit (ST62), and will return to step 2. Moreover, if the whole control section 130 is in the condition in which Data reception is impossible (ST61), it will notify Data receive-not-ready ability to a slave unit (ST63), and will return to step 2. When Data reception is impossible, the case where a master unit lapses into an Error condition etc. corresponds.

[0156] If 1-page transmission is ended after the notice by the above-mentioned step 33 and End of Page is received (ST64), the whole control section 130 will perform Error correction processing (it omits for details) (ST65), will update image file managed table 138a, a Copy attribute / format / medium information table 138b, and device-management table 138c (ST66), and will return to step 2.

[0157] After the notice by the above-mentioned step 33, if End of File is received at the time of all page data reception termination (ST67), the whole control section 130 will release the resource of the input unit which has transmitted the corresponding data (ST68). Then, the whole control section 130 updates image file managed table 138a, a Copy attribute / format / medium information table 138b, and device-management table 138c (ST69).

[0158] Then, when End of File to a total input unit is received, (ST70) and the whole control section 130 notify data transfer initiation to (ST71) and an airline printer, when the airline printer is specified (ST72). The response based on this notice is received (ST73), and from an airline printer, when data transfer is possible (ST74), the whole control section 130 notifies the contents of image file managed table 138a, and a Copy attribute / format / medium information table 138b to an airline printer (ST75). Then, the whole control section 130 transmits all print data to an airline printer (ST76).

[0159] When the transfer to the airline printer of all these print data is completed (ST77), the whole control section 130 cancels assignment of a master unit, and assignment of an airline printer, and notifies a condition to other input units (ST78).

[0160] In the above-mentioned step 71, when the airline printer is not specified, since the whole control section 130 is outputted from the printing means of an own digital copier, it is registered into waiting QUE for printing of the table which is not illustrated, ends processing (ST78), and returns to step 2.

[0161] Even if it carries out predetermined time progress, when a response is not received to the notice of data transfer initiation of the above-mentioned step 72 (STs 73 and 79), the whole control section 130 notifies the error message of an airline printer to a display and control section 132 (ST80), and returns to step 2.

[0162] After the notice by the above-mentioned step 33, when normal termination of the image transfer to an airline printer is received, (ST82) and the whole control section 130 cancel the condition of a master unit, and assignment of an airline printer, end a total input process (ST83), and return to step 2.

[0163] After the notice by the above-mentioned step 33, also when nothing receives, the whole control section 130 returns to step 2.

[0164] Drawing 32 - drawing 34 are the copy control processing flow charts in the whole time control section 130 of slave unit assignment.

[0165] If a slave unit is specified (ST91), the whole control section 130 will acquire the airline printer engine performance and image input parameter for the input operation notified from a master unit (ST92). a condition (namely, the condition which Error etc. has not generated --) receivable as a slave unit Or if it is in the condition which is not under use (ST93), a Copy attribute / format / medium information table 138b, and airline printer managed table 138d shown in drawing 18 - drawing 21 will be updated (STs 94 and 95). Furthermore, the whole control section 130 controls a display and control section 132, updates a screen display to the thing at the time of the slave state shown in drawing 7 - drawing 9 (ST96), and notifies slave reception **** to a master unit (ST97). Moreover, the whole control section 130 notifies a reception impossibility to a master unit as

(ST93) and a slave unit, when it cannot be received (ST98), and it returns to step 2.

[0166] If manuscript reading initiation **** is received from a master unit, reading initiation **** will be notified to a display and control section 132, and the lock of the start key of drawing 7 - drawing 9 will be canceled.

[0167] If input initiation is directed from a display and control section 132 (ST100), the whole control section 130 will notify input initiation directions to the input/output operation control section 134 in drawing 10, when input initiation is possible (ST101) (ST102). Moreover, the whole control section 130 updates the condition of device-management table 139c working (ST103), notifies a change of state to each equipment (ST104), and returns to step 2.

[0168] In the above-mentioned step 101, when input initiation judges the impossible according to factors, such as Error, the whole control section 130 notifies the impossibility of input initiation as an Error display to a display and control section 132 (ST105), and returns to step 2.

[0169] Moreover, after a 1-page input is completed (ST106), the whole control section 130 requires data transfer initiation from a master unit (ST107). If the response which can be transmitted is received according to this demand (ST108), the whole control section 130 will transmit the image data which transmitted the image attribute information in the inputted image data, the output-media information specified at the time of an input, and the output-form information specified at the time of an input to the master unit (STs 109, 110, and 111), and was inputted continuously to a master unit (ST112).

[0170] When the response to the initiation demand of the data transfer by the above-mentioned step 107 in which data transfer is possible cannot be received (ST113), the whole control section 130 directs an Error display to a display and control section 132, and is completed (ST114).

[0171] After a 1-page image data transfer is completed (ST115), the whole control section 130 transmits End of Page to a master unit (ST116). When transmission of all page data is completed, (ST117) and the whole control section 130 transmit End of File to a master unit (ST118).

[0172] When Resource release is notified from a master unit (ST119), while returning the display of a display and control section 132 to the normal mode (ST120), the condition of device-management table 139c is changed into a standby condition (ST121), and a change of state is notified to each input unit (ST122).

[0173] Drawing 35 - drawing 37 are the processing flow charts in a display and control section 132.

[0174] If initialization of the display-control section 132 is directed by the initialization processing in the whole control section 130 (ST131), a display and control section 132 will perform screen generation of a display, initialization processing of each internal table, etc. (ST132), and will return to step 2.

[0175] Moreover, if renewal of a status display is directed (ST133), a display and control section 132 will acquire the information on (ST134) device-management table 138c (139c), when the status-display screen is displayed (ST135), it will update a device-status display (ST136), and will return to step 2. When the status-display screen is not being displayed at the above-mentioned step 134, a display and control section 132 returns to step 2.

[0176] Moreover, when it is specified that it is a master unit (ST137), a display and control section 132 notifies master unit assignment to the whole control section 130 (ST138). Next, a display and control section 132 is changed to the status-display screen of other input units or an airline printer connected with the master unit through the network (ST139), and returns to step 2.

[0177] If there is slave unit assignment when choosing a slave unit on a status-display screen (ST140), a display and control section 132 will require reservation of assignment equipment of the whole control section 130 (ST141). When equipment is able to be secured, (ST142) and a display and control section 132 reverse the display of the secured equipment, specify secured ending (ST143), and return to step 2. When equipment cannot be secured, (ST142) and a display and control section 132 display the warning message of the purport which is not securable (ST144), and return to step 2.

[0178] When an Error display-related message is received from the machine status management section 131 (ST145), a display and control section 132 performs an Error status display (ST146). Although the device-status recovery processing initiation at the time of Error generating, Error discharge, and Error discharge etc. is included, since it is not related to especially this invention, this message is omitted for details.

[0179] Next, when what was specified as a slave unit is notified from the whole control section 130 (ST147), a display and control section 132 is changed to the operating-condition display screen by the side of a slave unit

which shows a display to drawing 7 - drawing 9 (ST148). About the display procedure in an input condition check screen display, a detailed level procedure is shown in drawing 38.

[0180] Moreover, also when an input condition parameter is changed at the time of assignment of a slave unit, according to the procedure shown in (ST149) and drawing 38, a display and control section 132 performs renewal of a display (ST148).

[0181] When manuscript input initiation is directed (ST150), a display and control section 132 notifies input initiation to the whole control section 130 (ST151), locks menu manipulation till input-process termination (ST152), and returns to step 2.

[0182] Moreover, if the completion of a 1-page input is notified (ST153), a display and control section 132 will update the contents of a display, such as input number of sheets, etc. (ST154). Moreover, when a total page input is completed (ST155) and it is a master unit (ST156), a display and control section 132 cancels a secured status display for a slave unit (ST157), and cancels a menu manipulation lock further (ST158).

[0183] In the above-mentioned step 156, when it is a slave unit, after a display and control section 132 receives disconnection of an input unit (ST159), it is changed to the usual input screen (ST160), and cancels a menu manipulation lock condition (ST158).

[0184] Drawing 38 shows the control flow chart in the display and control section 132 at the time of renewal of an image input parameter.

[0185] If the renewal of a display of an image input parameter is directed, as shown in drawing 7 - drawing 9, a display and control section 132 will classify into image attribute information, output-media information, and output-form information, and will acquire the operating-condition information in a master unit from a Copy attribute / format / medium information table 139b as shown in drawing 1919 (ST161). Furthermore, airline printer engine-performance information is acquired from airline printer managed table 139d shown in drawing 21 (ST162). The conditions and the airline printer engine-performance information which have been specified with display parameter classification and a master unit are compared (ST163), the screen data of ** which can be updated [parameter] are created and displayed (ST164), and only the contents of the parameter instead of the shape of an icon are displayed about that judged that is [modification] impossible so that it may illustrate by drawing 7 - drawing 9 about the parameter judged that is [display modification] possible (ST165).

[0186] Here, it depends for the functions (sort/staple function, binding margin function, etc.) in which a judgment possible [modification] / impossible needs to perform systematically the data of (1) master unit, and the input data in a slave unit on the conditions (it is information etc. also as feeding when specifying a specific output media) as which the assignment conditions of a master unit will be determined under priority and the conditions of (2) specification. Moreover, function which is not supported with an airline printer and output-media information which is not supported are carried out as [choose / it] based on the airline printer engine-performance information notified beforehand.

[0187] About all parameters, after creation and a display of screen data are completed (ST166), processing is ended and it returns to step 2.

[0188] Drawing 39 and drawing 40 are drawings showing the control flow chart at the time of printing in the input/output operation control section 134.

[0189] On the occasion of printing initiation, the input/output operation control section 134 acquires the device status of the airline printer by which printing assignment was carried out, or image formation equipment (ST171). A device status specifically means JOB existence during Error generating existence or activation. When printing initiation is impossible, processing is ended and it stands by to the following printing initiation timing.

[0190] Subsequently, when it is in the possible condition of printing initiation (ST172), the input/output operation control section 134 checks the waiting QUE condition for printing (existence of waiting JOB for printing) (ST173). When waiting JOB for printing exists (ST174), the input/output operation control section 134 acquires the output image attribute information shown in drawing 12 - drawing 17, output-form information, and output-media information (ST175). When the specified conditions cannot perform (ST176), the input/output operation control section 134 notifies the warning message of the purport in which printing initiation is impossible to the display and control section 132 of an airline printer, ends processing (ST177), and stands by to the following printing initiation timing. Thereby, a display and control section 132 displays the warning message of the purport in which printing initiation is impossible.

[0191] When the conditions specified by the above-mentioned step 176 can perform, the input/output operation control section 134 starts printing processing, and notifies the change of state (change in the working condition from a standby condition) of an airline printer to each equipment (ST178).

[0192] Next, the input/output operation control section 134 chooses the feeding origin to which the output procedure parameter according to the appointed output form was set to (ST179), and the appointed output media was set (ST180), sets the image-processing parameter according to the specified image attribute (ST181), and starts printing processing.

[0193] And the input/output operation control section 134 performs FILL processing (initialization processing) of the page buffer (memory area secured to PM in drawing 4) for developing image data, after 1-page processing is completed (ST182) (ST183). After the input/output operation control section 134 repeats this processing by all pages and ending processing for all pages (ST184), it notifies a change of state (change in the standby condition from a working condition) to all equipments (ST185), ends processing, and stands by to the following printing initiation timing.

[0194] Moreover, when it is not in the possible condition of printing initiation at the above-mentioned step 172, and when waiting JOB for printing does not exist at the above-mentioned step 174, the input/output operation control section 134 ends processing, and stands by to the following printing initiation timing.

[0195]

[Effect of the Invention] According to this invention, there is effectiveness which enables the increase in efficiency of an image read activity which was suitable for various image classification by enabling setting modification of the control approach at the time of image read and a parameter for every image formation equipment by which two or more connection was made through the network etc., or image reader.

[0196] According to this invention, in the bottom of the environment where two or more digital type image formation equipments, the picture input device, and the image output unit were connected through the network, it is effective in enabling improvement in the versatility in one-time copy actuation, and improvement in a throughput.

[0197] According to this invention, in the bottom of the environment where two or more digital copiers, scanner equipment, and printer equipment were connected through the network, it is effective in enabling improvement of operability to various manuscripts, such as a photograph manuscript, an alphabetic character manuscript, an one side manuscript, and a double-sided manuscript, and improvement in the throughput of copy processing to these manuscripts to diversify.

[0198] In the bottom of the environment where two or more network connections of a digital copier, scanner equipment, and the printer equipment were carried out according to this invention Input conditions specified with the scanner specified as the master unit, or the digital copier, such as manuscript mode and concentration, The output-form information, such as output medias, such as OHP, and both sides, is indicated by package by the digital copier [which was specified as the slave unit], and scanner equipment side, and it is effective in making the user setting actuation in the image alter operation by the side of a slave unit mitigate by specifying the conditions which can be changed to a user.

[0199] As opposed to the scanner and digital copier which were specified as the master unit under the environment where two or more network connections of a digital copier, scanner equipment, and the printer equipment were carried out according to this invention Image data is accompanied in case the image data inputted from the digital copier [which was specified as the slave unit] and scanner equipment side is transmitted. It is effective in the ability to obtain the optimal output quickly according to the class of input manuscripts to diversify, such as an alphabetic character manuscript, a photograph manuscript, and a manuscript with a strong substrate color, by transmitting manuscript classification information, such as concentration information specified for every equipment, a photograph manuscript, or an alphabetic character manuscript, the adjustment value information at the time of a gamma correction, etc.

[0200] As opposed to the scanner and digital copier which were specified as the master unit under the environment where two or more network connections of a digital copier, scanner equipment, and the printer equipment were carried out according to this invention By accompanying image data and transmitting output-media information, such as pasteboard specified for every equipment, paper only for colors, a regular paper, and OHP, in case the image data inputted from the digital copier [which was specified as the slave unit] and scanner equipment side is transmitted To the output-media use demand which becomes possible [specifying

various output medias for every input unit according to the class of various input manuscripts such as a photograph manuscript and a catalog,], and is diversified, an output-media change in the middle of an output is enabled, and it is effective in the ability to obtain the optimal output quickly.

[0201] As opposed to the scanner and digital copier by which master unit assignment was carried out under the environment where two or more network connections of a digital copier, scanner equipment, and the printer equipment were carried out according to this invention Image data is accompanied in case the image data inputted from the digital copier [by which slave unit assignment was carried out], and scanner equipment side is transmitted. By transmitting output-form information, such as one side / double-sided printing specified for every equipment, 90-degree rotation printing, a reversal output, and descending order / ascending-order output It becomes possible to specify these output forms for every input unit according to the class of input manuscript to diversify, an output-form change in the middle of an output is enabled to an output-form demand, and it is effective in the ability to obtain the optimal output quickly.

[0202] Moreover, image formation equipment with all network connection of two or more input units and image formation equipment is carried out, and usable as a master unit according to this invention, if the remainder is specified as a slave unit by using one of sets [them] as a master unit -- an operational-parameter setup of the image formation equipment of the image formation equipment of a master unit to a slave unit, while carrying out It sets from a slave unit under the environment where image data can be transmitted, to a master unit. A different printing processing ID number is given to each image formation equipment, account of image data 100 million field of a proper is secured to the store of a master unit for every ID number, input image data is unified based on an ID number, and, finally printing processing is carried out as one image file data.

[0203] Moreover, every manuscript mode, both sides/one side, ADF / hand, a concentration adjustment value, etc. can change the part of the input parameters specified from the master unit according to need by the slave unit side.

[0204] Conventionally, the manuscript input, such as a color copy, took time amount in many cases, and there was a case where the throughput of an airline printer could not fully be demonstrated. However, shortening of the memory input-process time amount of image data leads to improvement in a copy throughput by digitization of a copying machine.

[0205] Moreover, although the need corresponding to more manuscript classification was arising because colorization progresses, when copying conventionally the document which a color / monochrome mixture manuscript, and a photograph / alphabetic character manuscript load together, it was common that copied separately and a user unified manually after a copy respectively. However, batch print processing with a one-time copy is attained in a part for the number of equipment, and the mixture document of various attributes by using two or more digital copiers and unifying the inputted image data in memory.

[Translation done.]

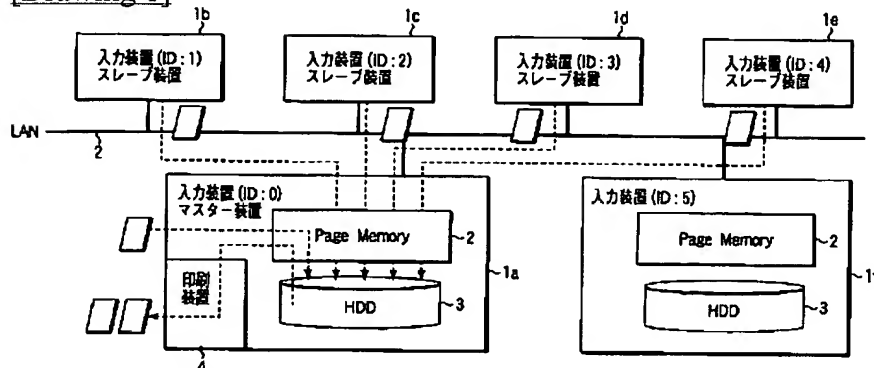
* NOTICES *

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

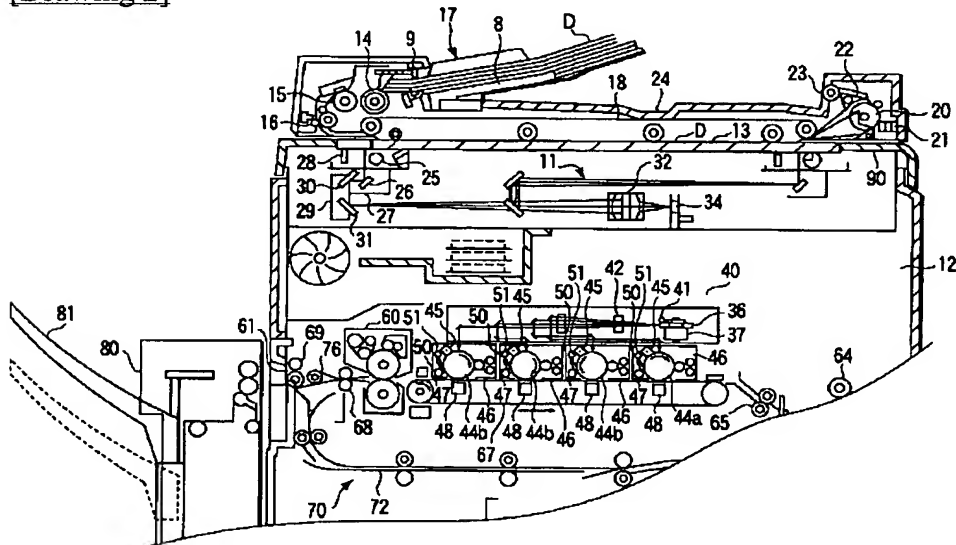
- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



[Drawing 2]



[Drawing 15]

(装置管理テーブル)

| | |
|--------------|-------------|
| 入力装置番号 | 0x00 |
| 動作状態 | 使用中 |
| Error番号 | 0x00 |
| 入力ページ数 | 0x1F |
| IPアドレス | 192.168.*** |
| PWD | **** |
| option | ADF |
| memory size | 3GB |
| 装置識別ID | 0 |
| マスタ/スレーブ装置指定 | マスタ |
| 出力装置指定 | 0x00 |
| 入力装置番号 | 0x01 |
| 動作状態 | 動作中 |
| Error番号 | 0x00 |
| 入力ページ数 | 0x20 |
| IPアドレス | 192.168.*** |
| PWD | **** |
| option | ADF |
| memory size | 48MB |
| 装置識別ID | 1 |
| マスタ/スレーブ装置指定 | スレーブ |
| 出力装置指定 | 0x00 |
| 入力装置番号 | 0x02 |
| 動作状態 | 使用中 |
| Error番号 | 0x00 |
| 入力ページ数 | 0x1F |
| IPアドレス | 192.168.*** |
| PWD | **** |
| option | ADF/ADU |
| memory size | 64MB |
| 装置識別ID | 2 |
| マスタ/スレーブ装置指定 | 未指定 |
| 出力装置指定 | 0x00 |
| : | : |

138c

[Drawing 16]

| | |
|--------------|------|
| 入力装置番号 | 0x07 |
| 動作状態 | 0xff |
| Error番号 | 0xff |
| 入力ページ数 | 0xff |
| IPアドレス | 0xff |
| PWD | 0xff |
| option | 0xff |
| memory size | 0xff |
| 装置識別ID | 0xff |
| マスタ/スレーブ装置指定 | 0xff |
| 出力装置指定 | 0x00 |

138c

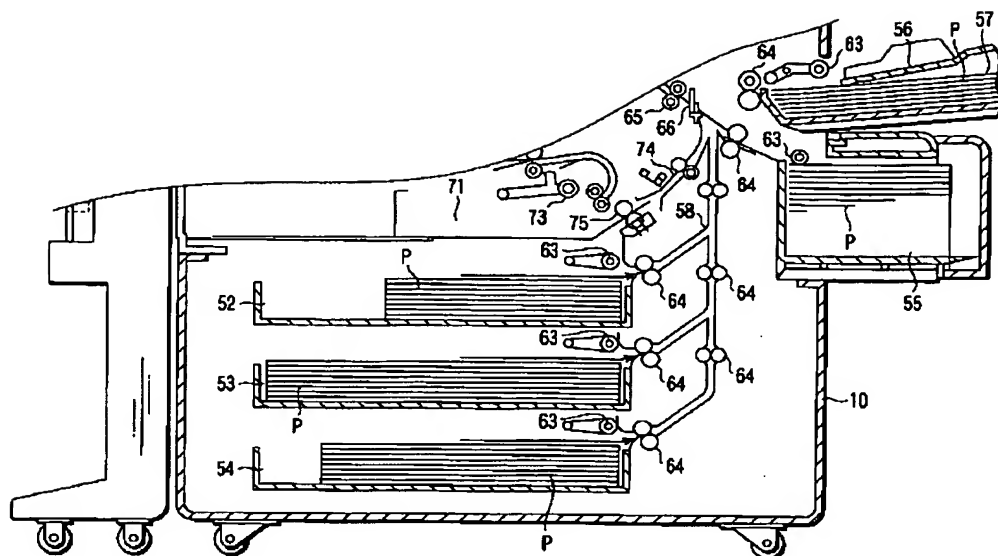
[Drawing 18]

(入力動作管理テーブル)

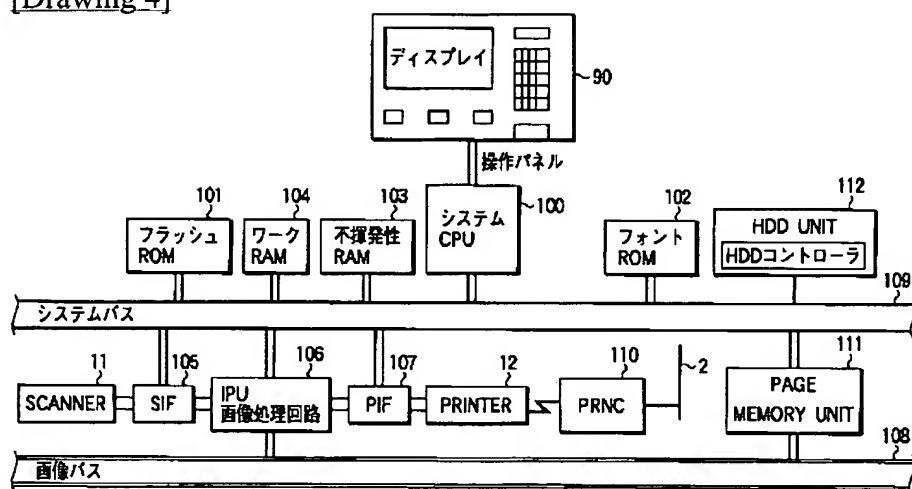
| | |
|----------|------|
| JOBID | 0x01 |
| マスタ装置情報 | 0x01 |
| 入力済みページ数 | 0x1F |
| 動作状態 | 入力中 |
| Errorタイプ | 0xFF |
| スレーブ装置指定 | 0x01 |
| マスタ装置指定 | 0x00 |

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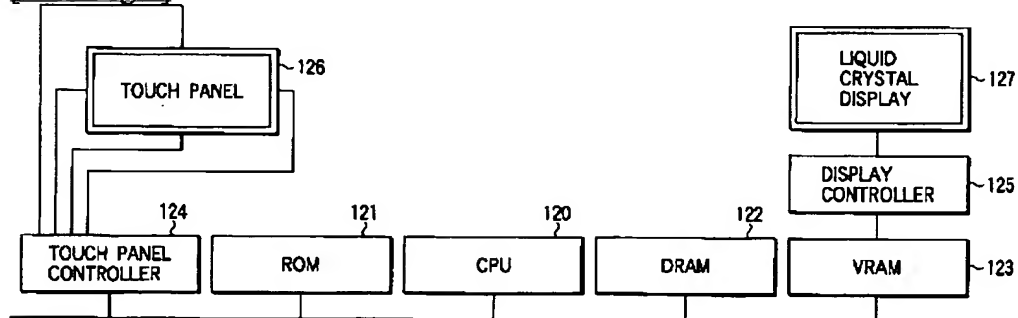
[Drawing 3]



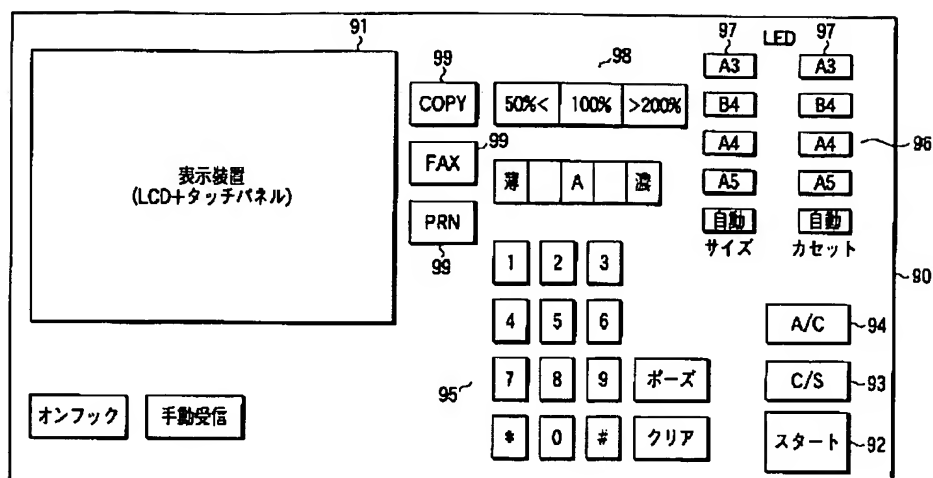
[Drawing 4]



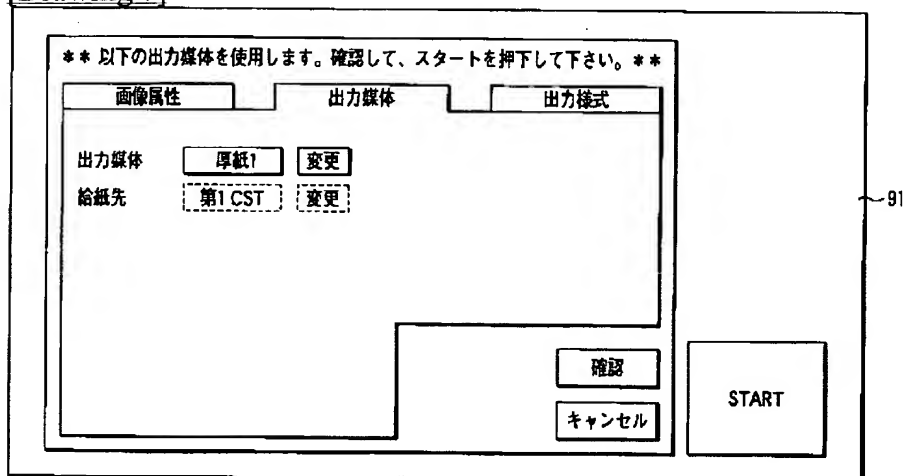
[Drawing 6]



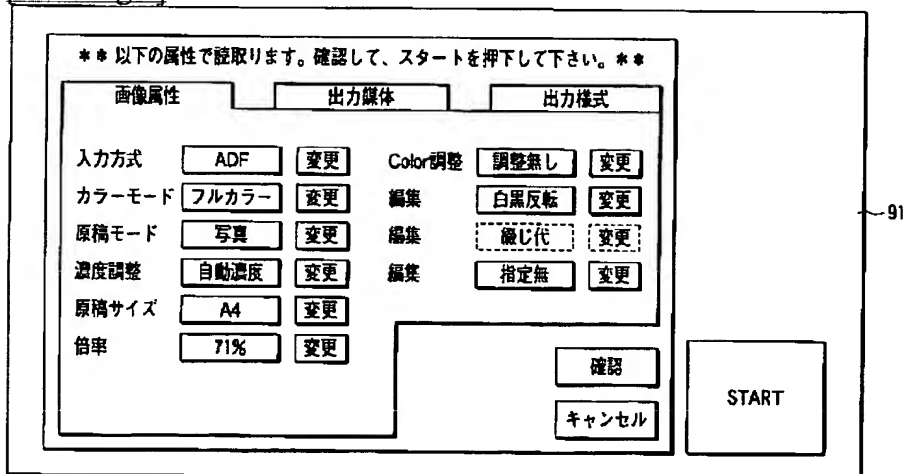
[Drawing 5]



[Drawing 7]



[Drawing 8]



[Drawing 12]

(画像ファイル管理テーブル)

| | |
|------------|------|
| JOBID | 0x01 |
| 入力装置情報 | 0x0C |
| ページ数 (装置0) | 0x1F |
| ページ数 (装置1) | 0x20 |
| ページ数 (装置2) | 0 |
| ページ数 (装置3) | 0x29 |
| ページ数 (装置4) | 0 |
| ページ数 (装置5) | 0 |
| ページ数 (装置6) | 0 |
| ページ数 (装置7) | 0 |
| 入力動作状態 | 入力中 |
| Total Page | 0x68 |
| 出力装置指定 | 0x05 |

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[Drawing 9]

*** 以下の出力様式で出力します。確認して、スタートを押下して下さい。***

| 画像属性 | 出力媒体 | 出力様式 |
|-----------|--------|------|
| 回転出力 | 90度 | 変更 |
| 両面出力 | 片面 | 変更 |
| 仕上げ | Staple | 変更 |
| Sort Mode | ソート | 変更 |

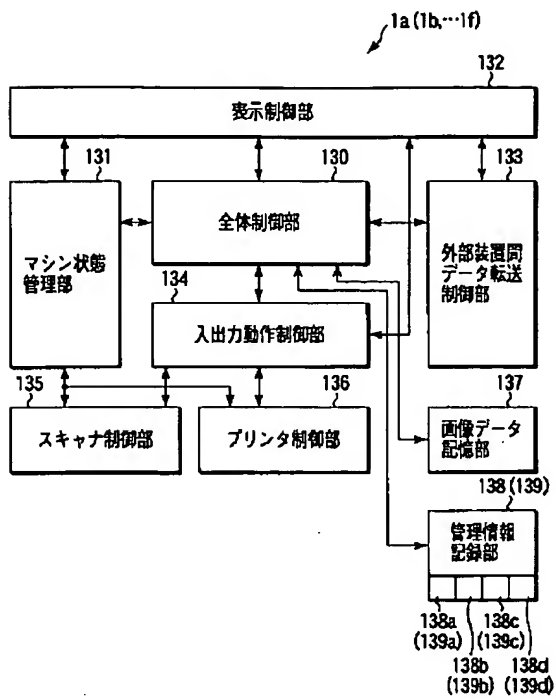
確認

キャンセル




START

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[Drawing 10]



[Drawing 11]

| 頁先頭 ← | | → 頁後方 | | |
|---|--|--------------------------------------|---|--------------------------------------|
| 入力装置 (0) 用 メモリ Master装置 ID番号: 0  P1~P31 | 入力装置 (1) 用 メモリ スレーブ装置 ID番号: 1  P32~P63 | 入力装置 (2) 用 メモリ ID番号: FF 非使用 | 入力装置 (3) 用 メモリ スレーブ装置 ID番号: 2  P64~P104 | 入力装置 (4) 用 メモリ ID番号: FF 非使用 |

[Drawing 14]

| | | |
|------|----------------|-------|
| 出力媒体 | Media | 普通紙 |
| | 給紙元 | 手差し |
| 出力様式 | 回転出力 | 90度 |
| | 両面出力 | 無し |
| | 仕上げ | ステイブル |
| | ソートモード | ノンソート |
| 画像属性 | : | : |
| | 入力装置番号 | 0x07 |
| | JOBID | 0xff |
| | File Name | 0xff |
| | Page数 | 0xff |
| | 入力方式 | 0xff |
| | 原稿サイズ | 0xff |
| | 倍率 | 0xff |
| | Color or Black | 0xff |
| | Format | 0xff |
| | 濃度調整 | 0xff |
| | カラー調整 | 0xff |
| | 編集 | 0xff |
| | 編集 | 0xff |
| | Mode | 0xff |
| 出力媒体 | Media | 0xff |
| | 給紙元 | 0xff |
| 出力様式 | 回転出力 | 0xff |
| | 両面出力 | 0xff |
| | 仕上げ | 0xff |
| | ソートモード | 0xff |

[Drawing 13]

(Copy属性/様式/媒体情報テーブル)

| | | |
|------|----------------|-------------|
| 画像属性 | 入力装置番号 | 0x00 |
| | JOBID | 0x01 |
| | File Name | 1_0_***.jpg |
| | Page数 | 0x1F |
| | 入力方式 | ADF |
| | 原稿サイズ | A4 |
| | 倍率 | 71 |
| | Color or Black | Color |
| | Format | JPEG |
| | 濃度調整 | 自動濃度 |
| | カラー調整 | 調整なし |
| | 編集 | 白黒反転 |
| | 編集 | 鏡じ代 |
| | 編集 | 指定無 |
| | Mode | 写真 |
| 出力媒体 | Media | 厚紙 |
| | 給紙元 | 第1カセット |
| 出力様式 | 回転出力 | 40度 |
| | 両面出力 | 片面 |
| | 仕上げ | ステイブル |
| | ソートモード | ソート |
| 画像属性 | 入力装置番号 | 0x01 |
| | JOBID | 0x01 |
| | File Name | 1_0_***.jpg |
| | Page数 | 0x20 |
| | 入力方式 | ADF |
| | 原稿サイズ | A4 |
| | 倍率 | 100 |
| | Color or Black | Black |
| | Format | JPEG |
| | 濃度調整 | 自動濃度 |
| | カラー調整 | 調整なし |
| | 編集 | 白黒反転 |
| | 編集 | 鏡じ代 |
| | 編集 | 指定無 |
| | Mode | Text |

[Drawing 17]

〔印刷装置管理テーブル〕

| | |
|-----------|-------------|
| 出力装置番号 | 0x05 |
| 動作状態 | 空き |
| カラー性能 | フルカラー |
| Error番号 | 0x00 |
| 出力ページ数 | 0xFF |
| IPアドレス | 192.168.*** |
| PWD | **** |
| 両面装置 | ON |
| ソータ | ON |
| ステイブル | ON |
| 回転出力 | 可能 |
| メモリ容量 | 3GB |
| 大容量給紙カセット | A4 |
| 第1カセットサイズ | A4R |
| 第1カセット媒体 | Normal |
| 第2カセットサイズ | A3 |
| 第2カセット媒体 | Normal |
| 第3カセットサイズ | A4 |
| 第3カセット媒体 | 厚紙 |
| 第4カセットサイズ | B4 |
| 第4カセット媒体 | Normal |
| 手差し給紙サイズ | A4 |
| 手差し給紙媒体 | カラー専用紙 |

138d

〔Drawing 19〕

(Copy属性/様式/媒体情報テーブル)

| | | |
|------------------|----------------|-------------|
| 面 信 属 性 | 入力装置番号 | 0x01 |
| | JOBID | 0x01 |
| | File Name | 1_0_***.jpg |
| | Page数 | 0x1F |
| | 入力方式 | ADF |
| | 原稿サイズ | A4 |
| | 倍率 | 71 |
| | Color or Black | Color |
| | Format | JPEG |
| | 濃度調整 | 自動濃度 |
| | カラー調整 | 調整なし |
| | 編集 | 白黒反転 |
| | 編集 | 超じ代 |
| | 編集 | 指定無 |
| 出 力 様 式 | Mode | 写真 |
| | Media | 厚紙 |
| | 給紙元 | 第1カセット |
| | 回転出力 | 90度 |
| 出 力 様 式 | 両面出力 | 片面 |
| | 仕上げ | ステイブル |
| | ソートモード | ソート |

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〔Drawing 20〕

(装置管理テーブル)

| | |
|-------------|-------------|
| 入力装置番号 | 0x00 |
| 動作状態 | 動作中 |
| Error番号 | 0x00 |
| 入力ページ数 | 0x20 |
| IPアドレス | 192.168.*** |
| PWD | **** |
| option | ADF |
| memory size | 48MB |
| 装置識別ID | 0 |
| スレープ装置指定 | 0x01 |
| 出力装置指定 | 0x00 |
| 入力装置番号 | 0x01 |
| 動作状態 | 使用中 |
| Error番号 | 0x00 |
| 入力ページ数 | 0x1F |
| IPアドレス | 192.168.*** |
| PWD | **** |
| option | ADF |
| memory size | 48MB |
| 装置識別ID | 1 |
| スレープ装置指定 | 0x00 |
| 出力装置指定 | 0x00 |
| : | : |
| 入力装置番号 | 0x07 |
| 動作状態 | 0xff |
| Error番号 | 0xff |
| 入力ページ数 | 0xff |
| IPアドレス | 0xff |
| PWD | 0xff |
| option | 0xff |
| memory size | 0xff |
| 装置識別ID | 0xff |
| スレープ装置指定 | 0xff |
| 出力装置指定 | 0x00 |

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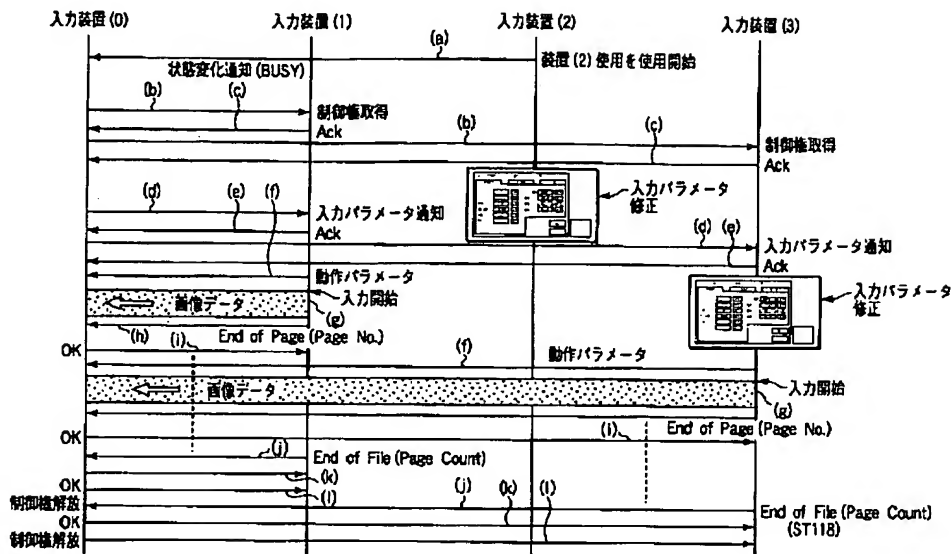
[Drawing 21]

(印刷装置管理テーブル)

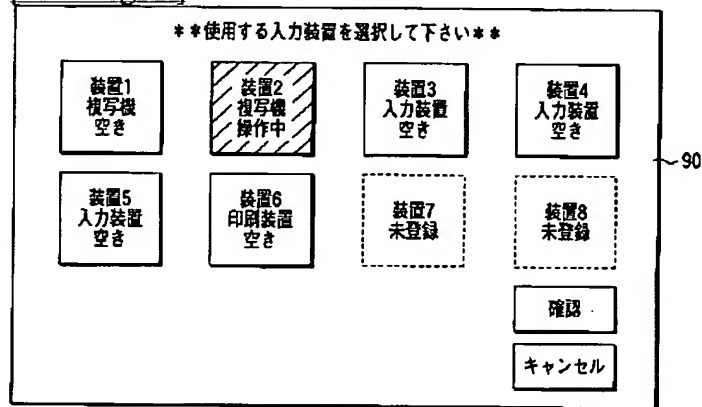
| | |
|-----------|-------------|
| 出力装置番号 | 0x05 |
| 動作状態 | 空き |
| カラー性能 | フルカラー |
| Error番号 | 0x00 |
| 出力ページ数 | 0xFF |
| IPアドレス | 192.168.*** |
| PWD | **** |
| 両面装置 | ON |
| ソータ | ON |
| ステイブル | ON |
| 回転出力 | 可能 |
| メモリ容量 | 3GB |
| 大容量給紙カセット | A4 |
| 第1カセットサイズ | A4R |
| 第1カセット媒体 | Normal |
| 第2カセットサイズ | A3 |
| 第2カセット媒体 | Normal |
| 第3カセットサイズ | A4 |
| 第3カセット媒体 | 厚紙 |
| 第4カセットサイズ | B4 |
| 第4カセット媒体 | Normal |
| 手差し給紙サイズ | A4 |
| 手差し給紙媒体 | カラー専用紙 |

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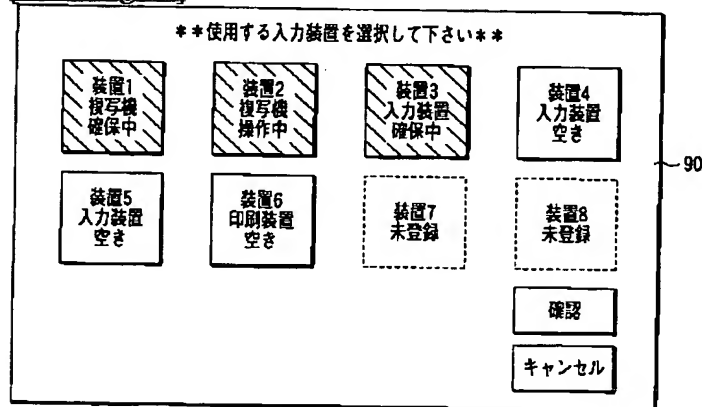
[Drawing 22]



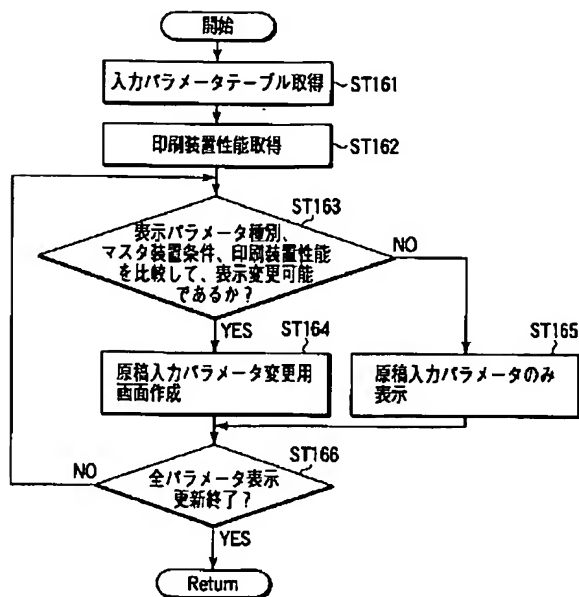
[Drawing 23]



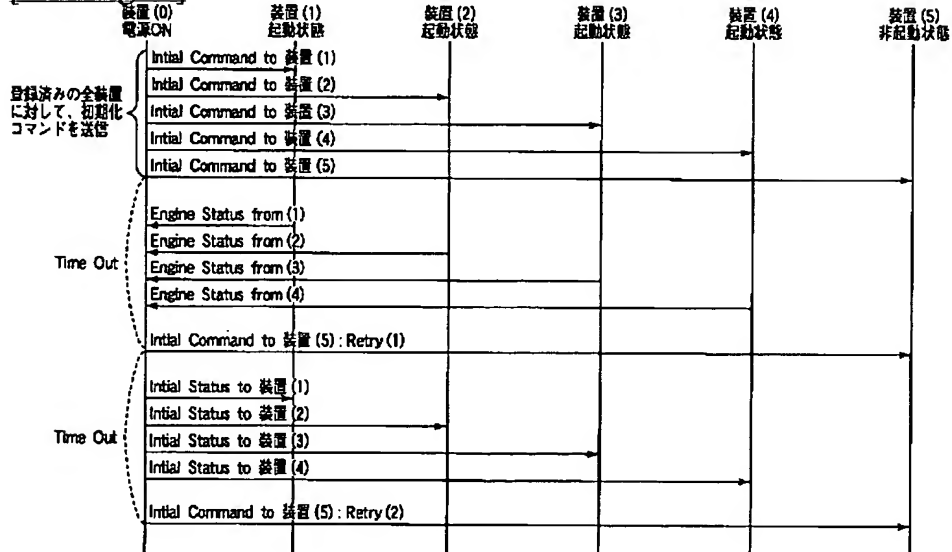
[Drawing 24]



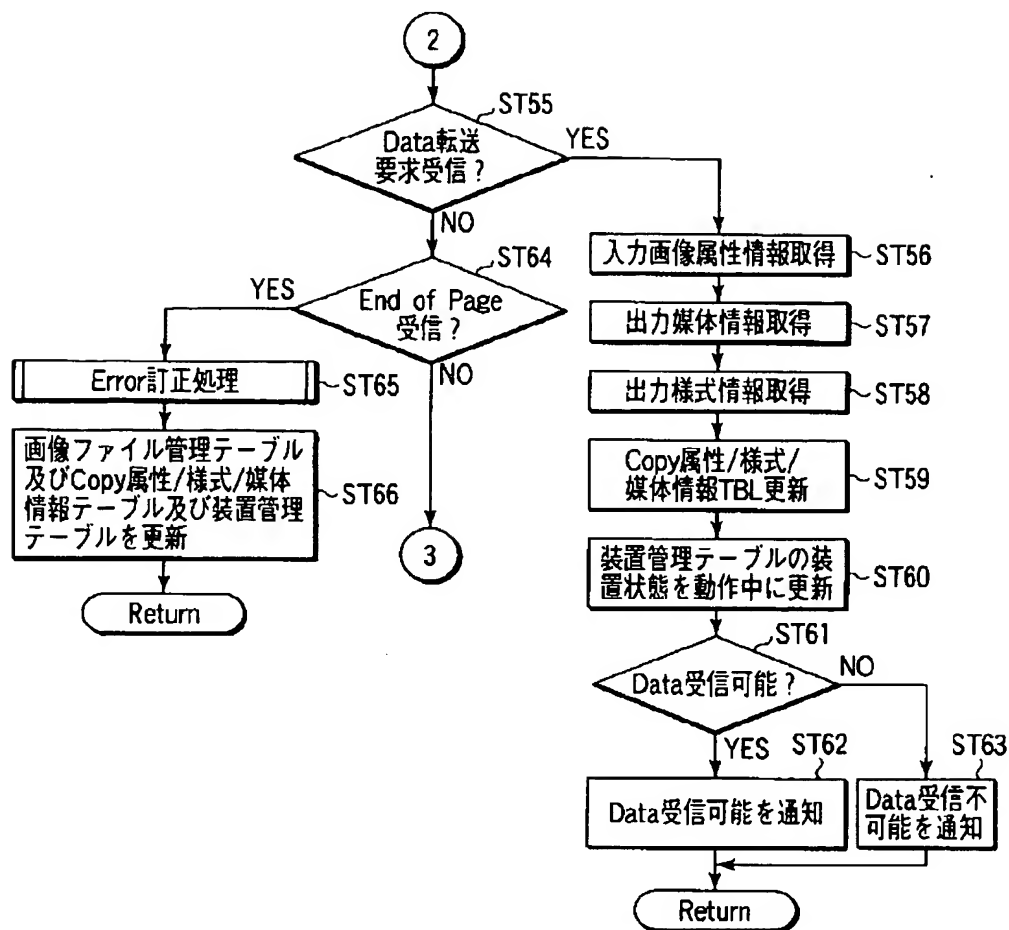
[Drawing 38]



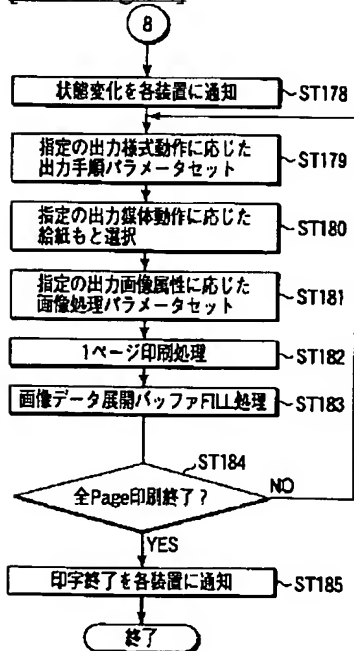
[Drawing 25]



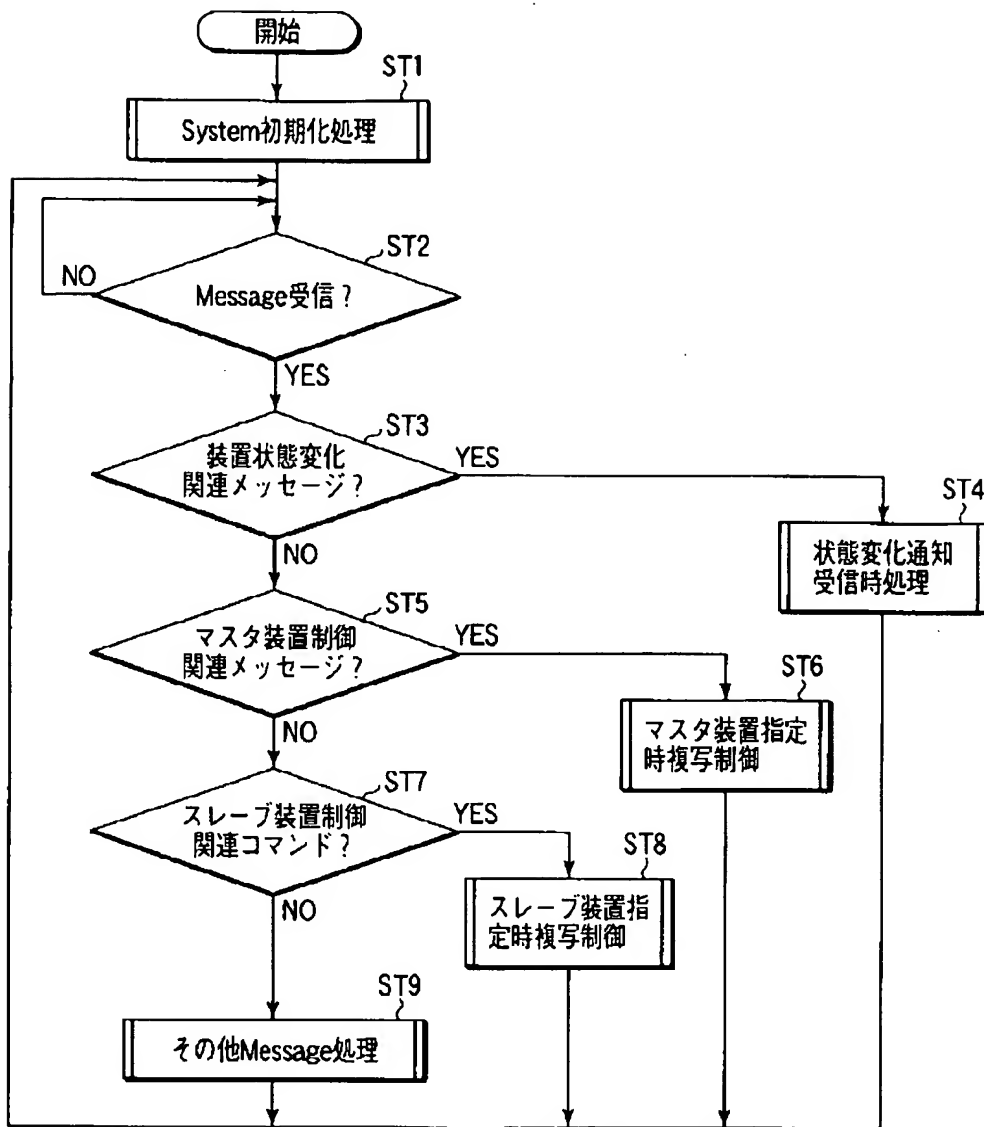
[Drawing 30]



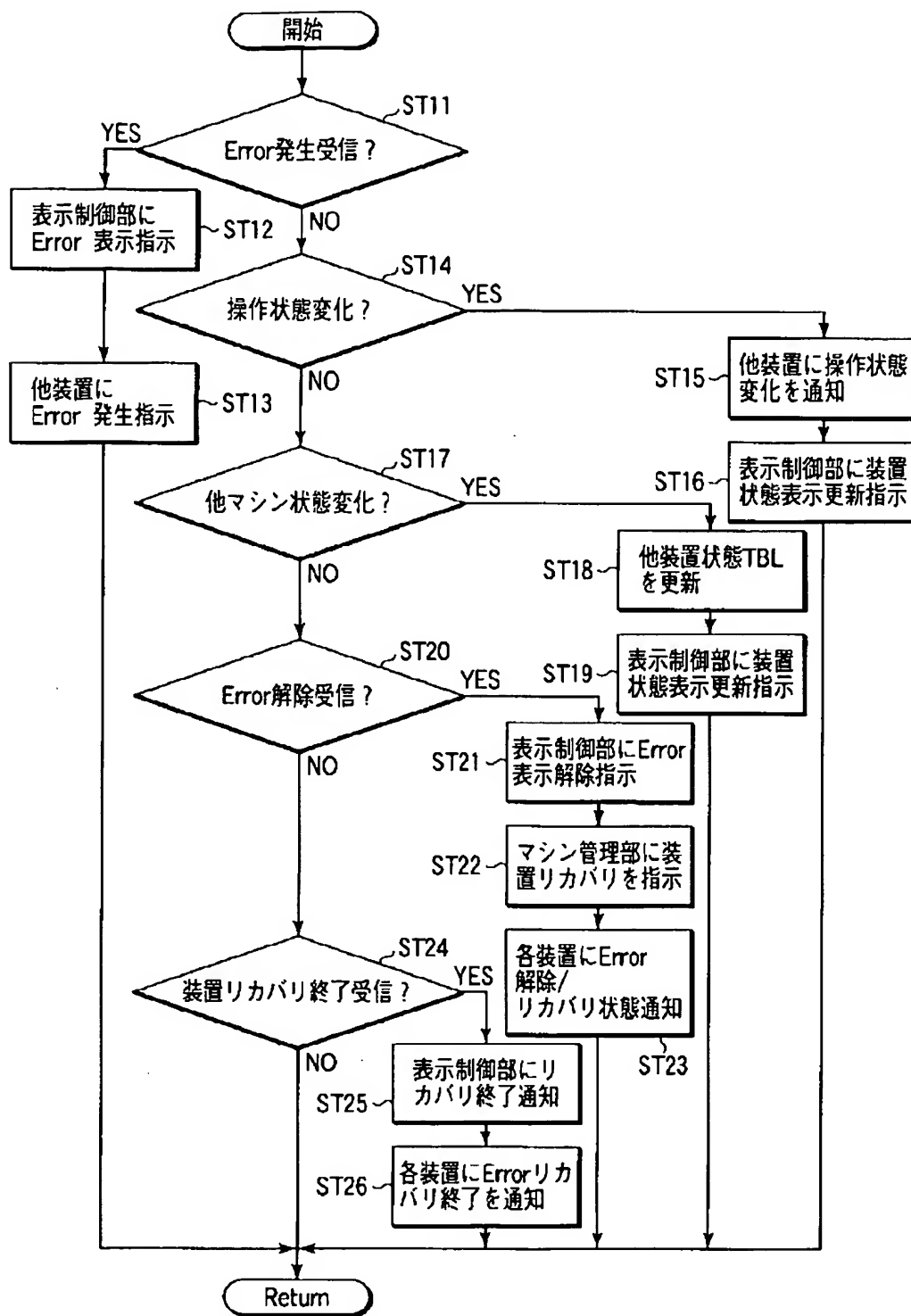
[Drawing 40]



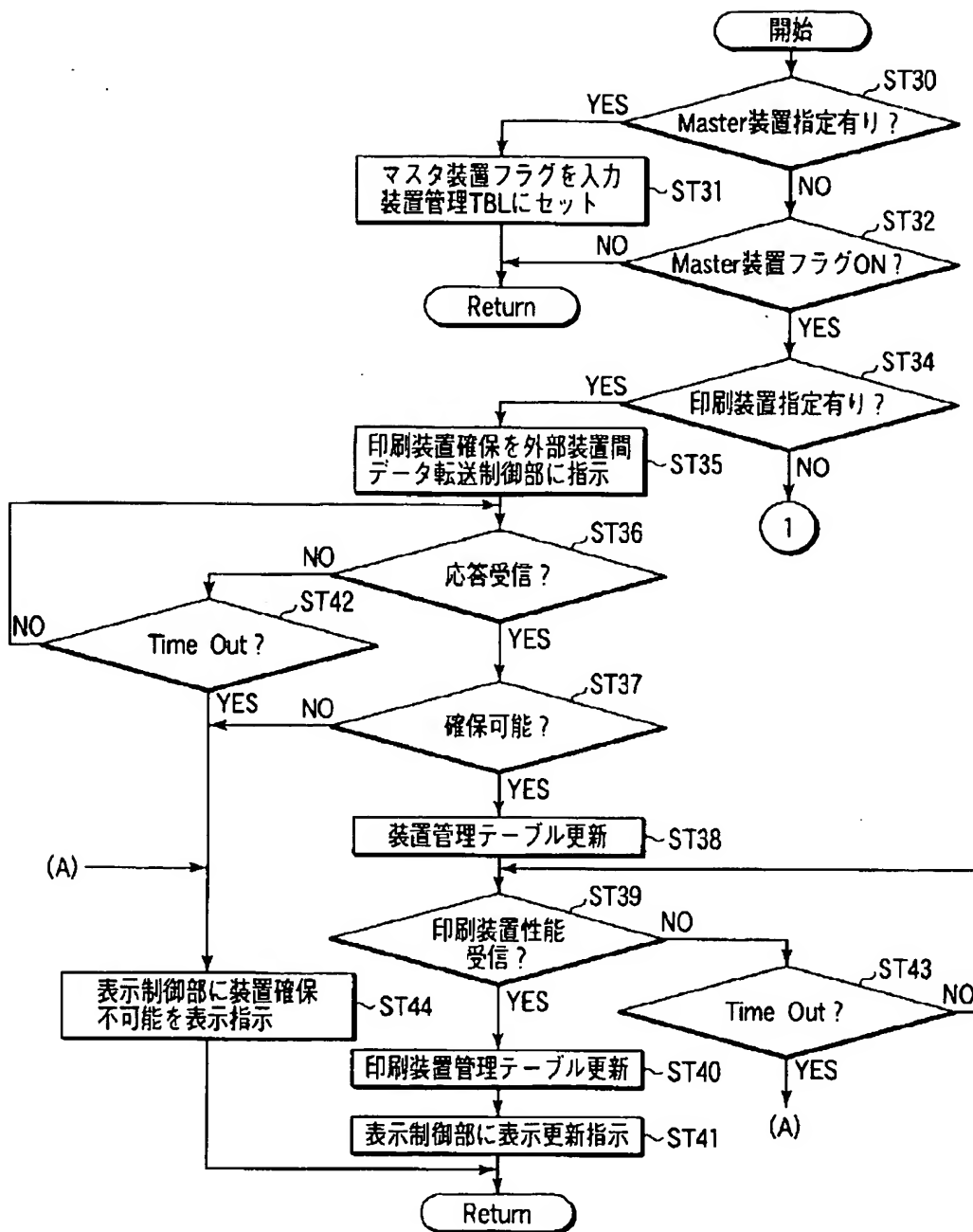
[Drawing 26]



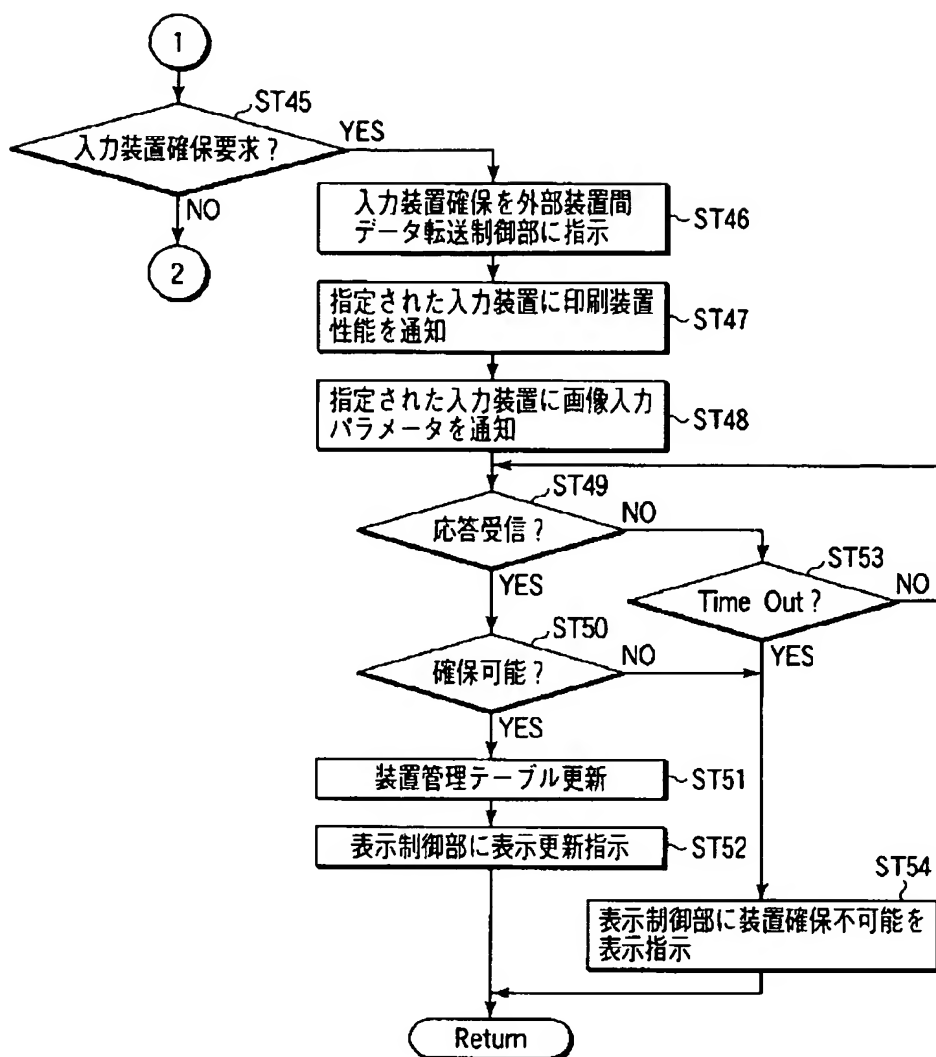
[Drawing 27]



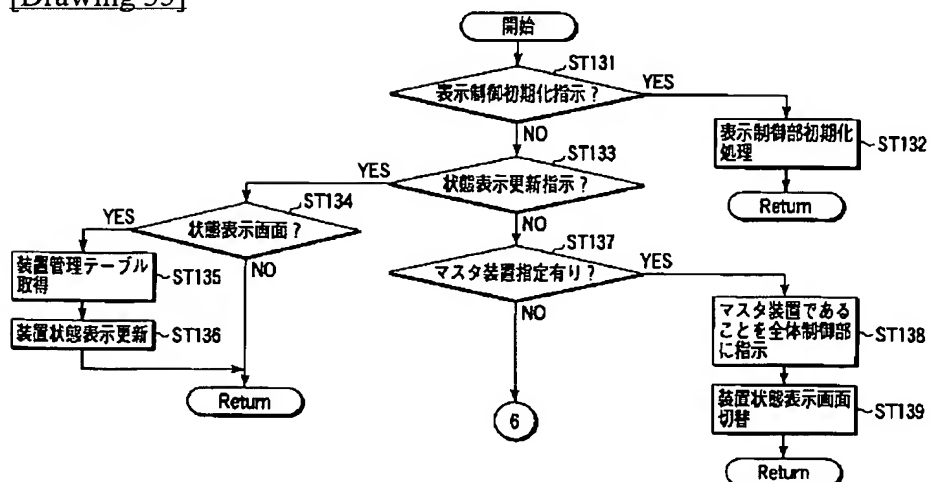
[Drawing 28]



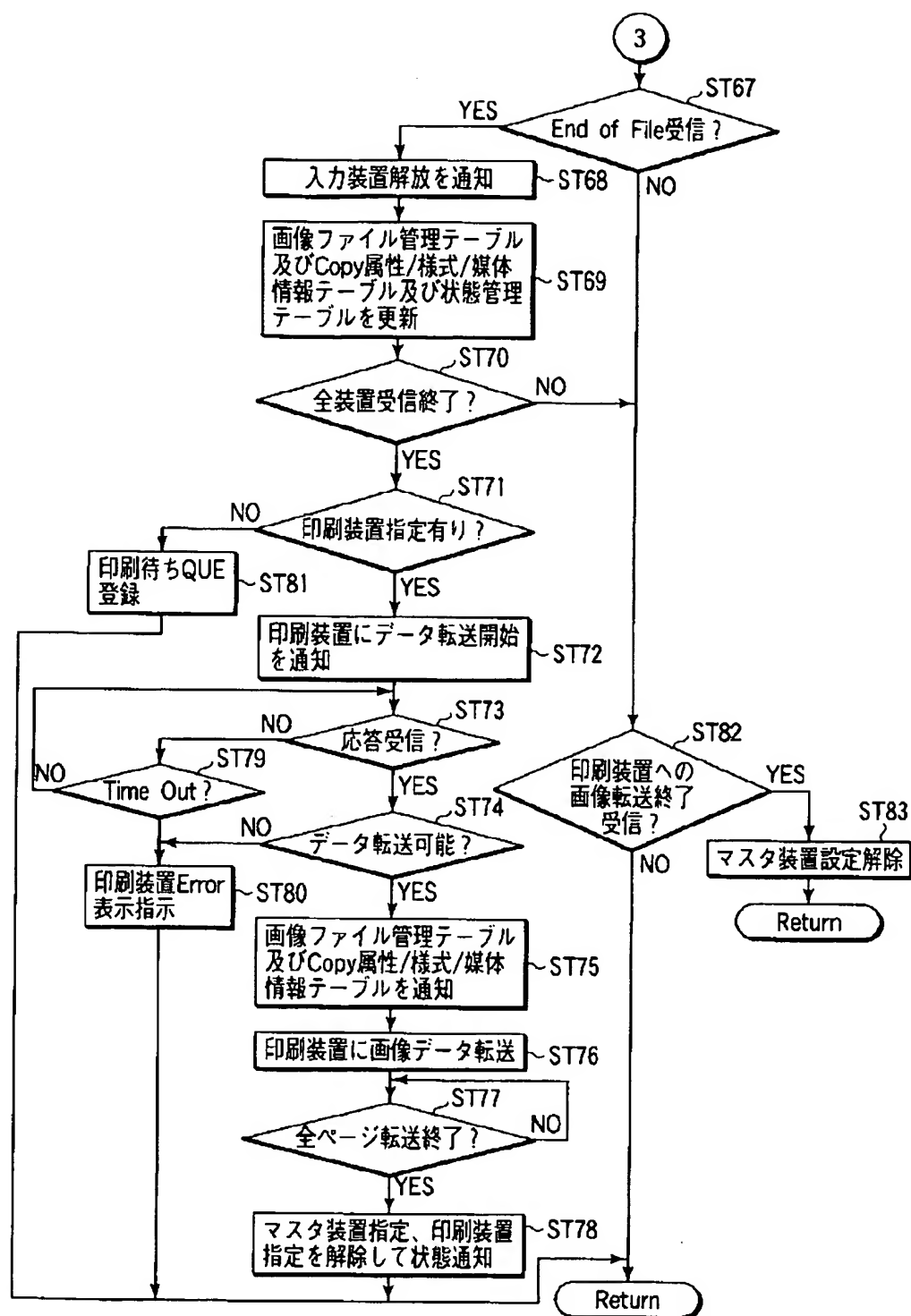
[Drawing 29]



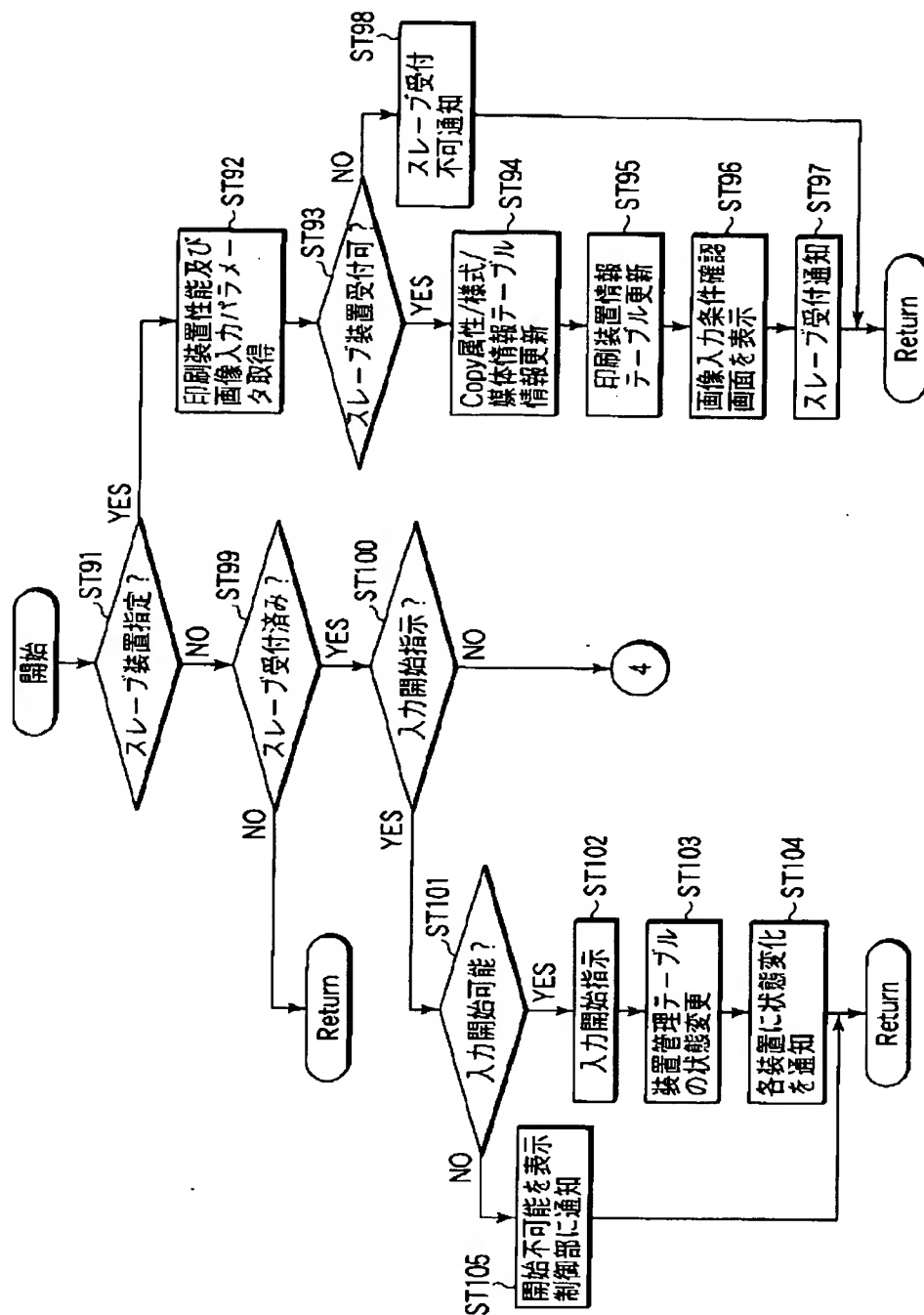
[Drawing 35]



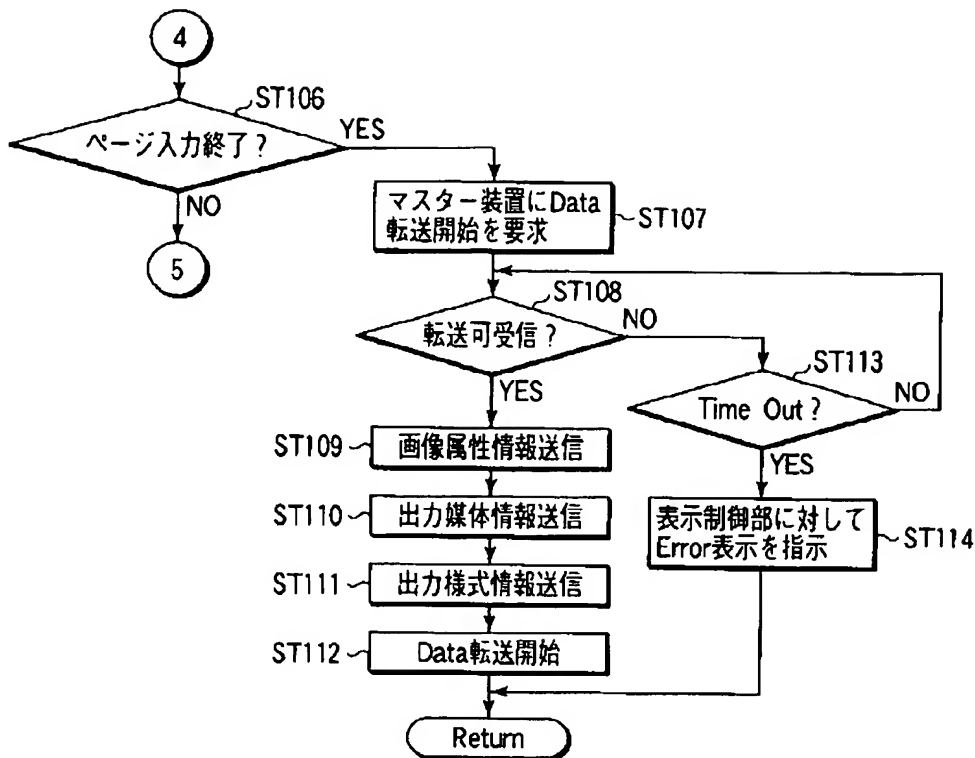
[Drawing 31]



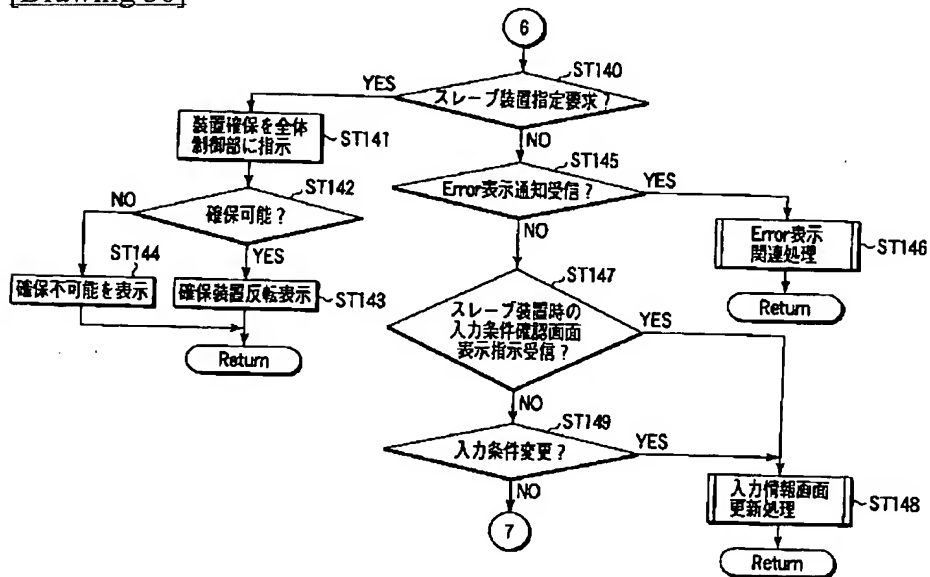
[Drawing 32]



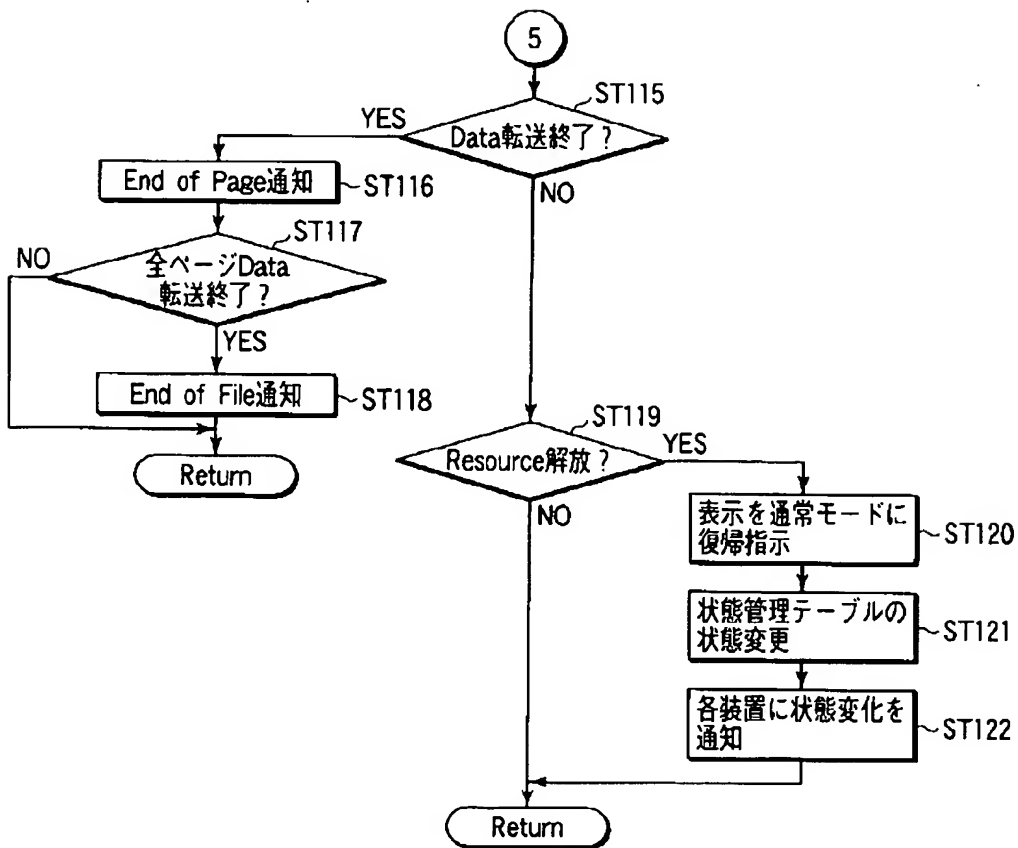
[Drawing 33]



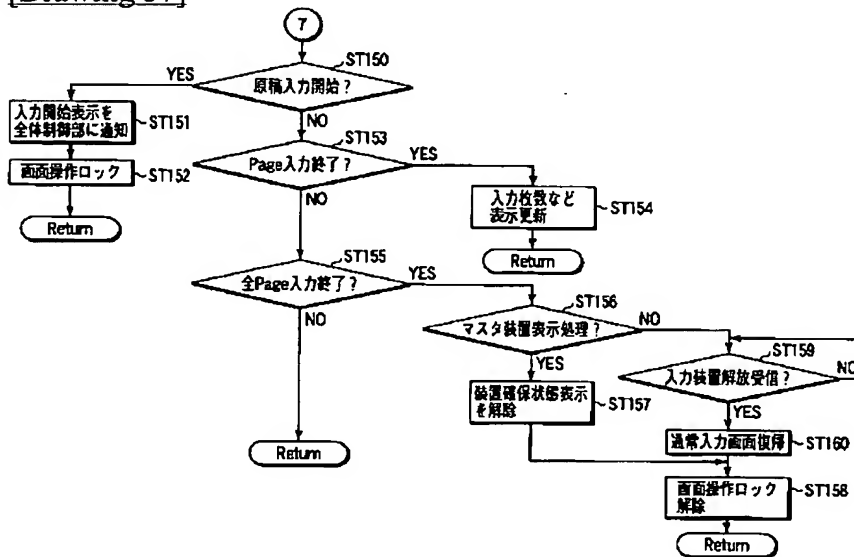
[Drawing 36]



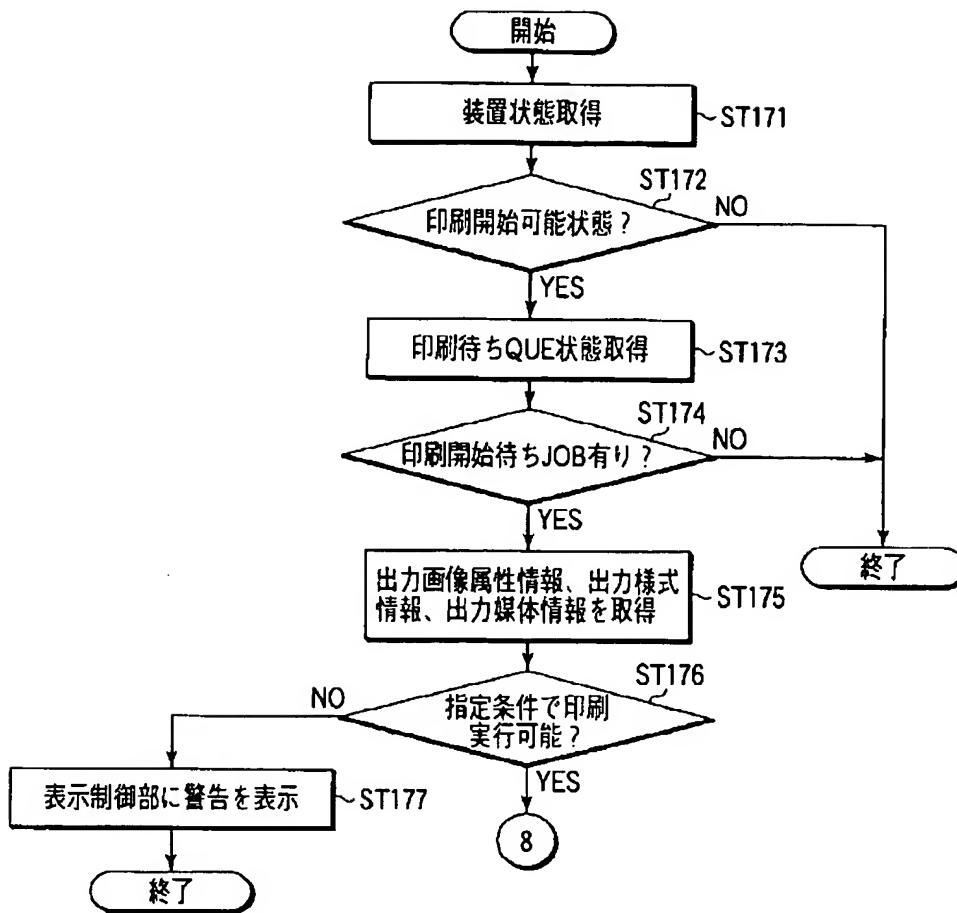
[Drawing 34]



[Drawing 37]



[Drawing 39]



[Translation done.]